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## *CARCINOMA OF THE BODY AND TAIL OF THE* PANCREAS: A STUDY BASED ON *TWENTY CASES.*


*By R. M. DUNN AND A. B. CONOMY,*

*Repatriation General Hospital, Concord.*


CARCINOMA of the pancreas has probably been known for many centuries. Trendelenburg is said to have removed the first pancreatic growth in 1882.

Since 1908, when Chauffard first differentiated carcinoma of the head of the pancreas and that of the body and tail of the organ, medical literature, apart from some American sources, appears to have given scant attention to the clinico-pathological features of carcinoma of the pancreas, particularly the body and tail of the organ. Probably the first adequate reference is by Ransom, who reported 16 such cases in 1935. G. Hyman Duff, in 1939, in reporting 50 cases gave an excellent clinico-pathological account. We have not been able to find a satisfactory series of cases of carcinoma of the body and tail of the pancreas in the Australian literature.

Most text-books and current medical teaching seem to stress the clinical syndrome of carcinoma of the head of the pancreas, leaving the impression that carcinoma of the body and tail of the pancreas is so rare as not to merit detailed consideration. Generations of medical students in this country have grown up with the idea that painless jaundice, enlarged gall-bladder and progressive weight loss are requisites for the diagnosis of pancreatic carcinoma. It is probable that the frequency of the site of carcinoma in the pancreas is proportional to the bulk of the individual parts of the organ; that is, one would expect carcinoma of the head to be much less common than carcinoma of the body and tail. In the past three years we have seen 20 confirmed cases of carcinoma of the body and tail, but only five cases of the head syndrome (carcinoma of the head of the pancreas, the periampullary part of the duodenum, or the lower end of the common bile duct).

Duff in his series sums up by stating that carcinoma of the body and tail of the pancreas is approximately one-third as common as carcinoma of the head. This is quite the reverse of our findings and may possibly mean that the incidence of carcinoma of the body of the pancreas is higher in this country than in North America. However, the clinical diagnosis of carcinoma of the head is not often overlooked, whilst carcinoma of the body or tail is seldom diagnosed during life. Moreover, carcinoma of the lower end of the common duct may be erroneously diagnosed as carcinoma of the head of the pancreas. Thus the statistics compiled from clinical records are likely to give too high a figure for carcinoma of the head of the

pancreas and too low a figure for carcinoma of the body and/or tail.

We feel that primary carcinoma of the pancreas should be considered as three distinct syndromes in the following order of importance: (i) carcinoma of the body and tail, (ii) carcinoma of the head, (iii) islet-cell carcinoma. We propose to consider the first of these in some detail, presenting a series of 20 cases, all proven microscopically at laparotomy and/or post-mortem examination.

## Ætiology and Age Incidence.

The average age of our series of subjects is fifty-four years, the youngest being a man of twenty-nine years and the oldest seventy-one years. No case of carcinoma of the body or tail of the pancreas was found amongst our female patients, although the latter are restricted by virtue of the nature of the hospital. Statistics from several large clinics give the incidence as three times as common in males as in females. Statistical studies by Marble indicate a higher incidence of carcinoma of the pancreas in diabetic patients. One of our patients had evidence of *diabetes mellitus* and several showed transient glycosuria.

From a study of the occupations and the dietetic and alcoholic intake of our patients, we get the impression that this type of carcinoma is commoner among the higher income groups with the associated higher standard of living. This suggests that alcohol and diet may play some part in the ætiology of this disease. One of our patients had severe recurrent stomal ulceration with pancreatic penetration and hypertrophic gastritis. This patient died from ulcer hæmorrhage, and an early carcinoma of the body of the pancreas was found at post-mortem examination. This suggests that a hormonal or infective basis may also play a part. We have no record of any case in which pancreatitis subsequently became malignant.

In one of our cases there was a clear history of infective hepatitis some two years prior to the onset of symptoms of carcinoma of the body of the pancreas.

## Pathology.

Carcinoma of the body and tail of the pancreas tends to extend much more massively and to metastasize more widely and at an earlier stage than carcinoma of the head. The reasons for this are obvious.

1. The gland has no strong restraining capsule. The anterior and inferior surfaces of the body and tail are covered only by peritoneum. The anterior surface is part of the floor of the lesser sac, and the inferior surface faces the general peritoneal cavity. Consequently, invasion of the stomach, the colon, or the third part of the duodenum by direct spread in continuity is common, and widespread peritoneal implantation with omental, recto-vesical and ovarian metastases and ascites is often seen. Posteriorly the growth is restrained by the aorta, the left crus of the diaphragm, the left adrenal and the left kidney for a time.

2. The gland enjoys a rich lymphatic supply and lies close to the *cisterna chyli* and the main intestinal lymphatic trunk. Consequently spread to local lymph glands is early. Involvement of the *cisterna chyli* leading to Troisier's sign is not uncommon (four cases in this series), and chylous ascites occurs occasionally (one case in our series).

3. Spread by perineural lymphatics is important in view of the intimate association between the gland and the cœliac plexus. Involvement of the latter may be deduced clinically by the peculiar type of intractable, gnawing, epigastric pain, attacks of intestinal distension and constipation. This triad of symptoms is of sinister import, and indicates that the growth has already spread far beyond the confines of the gland.

4. The venous drainage of the body and tail of the pancreas is provided by a series of short, wide veins, which drain directly into the splenic vein, the latter lying partly embedded in the postero-superior part of the gland. Early and widespread portal dissemination must obviously occur in these circumstances.

### *Macroscopic Appearances.*

The tumour mass is usually hard and nodular, and may be felt invading contiguous organs and lymph nodes. In most instances the growth is stony-hard, almost gritty to the knife-edge and fibrous in appearance. The colour may be greyish, white or yellowish. We have not seen any mucoid changes in our series on gross section, and only rarely has the tumour seemed brain-like.

### *Methods of Spread.*

The methods of spread are as follows:

1. By local extension to contiguous organs. Although the tail of the pancreas abuts on the spleen, the spleen shows a curious resistance to invasion.

2. By lymphatic spread to the pancreatico-lienal, gastric, hepatic, cœliac, mesenteric and periaortic glands. More distant spread to mediastinal glands and supraclavicular glands probably occurs via the thoracic duct. Perineural lymphatic spread also occurs as described above.

3. By blood channels. Most frequently this is portal, and thence there is a tertiary spread to the lungs and finally generalized dissemination (seen in two cases).

4. By peritoneal seeding.

### *Microscopic Appearance.*

Two main types of growth were seen: (*a*) duct carcinoma, (*b*) acinar cell carcinoma. The former seemed to originate in the pancreatic duct system, and showed irregular duct-like spaces lined by columnar epithelium. In some instances small papillary projections were present in the lumina of the spaces. The latter showed cells resembling the pancreatic parenchyma, occurring in masses and sheets with hyperchromatic nuclei. Pleomorphic tendencies were frequent and the stroma was scanty, and many of these growths were classified by the pathologist as anaplastic. In about half the series anaplastic growths were present.

## Clinical Features.

The main symptoms are as follows.

1. Central and left upper abdominal pain radiating to the left lower thoracic region and the back. The pain is frequently of a boring nature, intermittent at first, later becoming relentless. Patients commonly stated that the pain had no regular relationship to meals, that it was worse when they were lying on the left side, and definitely worse when lying supine, and that relief was obtained by sitting up with the spine flexed. We regard epigastric pain radiating to the left hypochondrium and chest as very suggestive of pancreatic disease. The association with thoracic backache makes suspicion even stronger. The pain is unrelieved usually by the exhibition of alkaline powders. Pain in the early stages is splanchnic in origin because the pancreas enjoys a rich nerve supply from the cœliac plexus. Radiation to the left hypochondrium and the left side of the chest is probably due to a rise in intraductal tension due to blockage by growth. Later the cœliac plexus itself and the parietal peritoneum are involved, with exacerbation of local pain and superadded colicky pain which is usually more generalized. Of course, metastasis may cause pain in whatever organ or region is involved.

2. Loss of weight. This is a constant feature and may be a presenting symptom, especially if the carcinoma primarily involves the tail of the pancreas. The loss of weight is usually of the order of one and a half to two stone within a few months. The reason for the profound loss of weight is difficult to explain, as anorexia is usually a later symptom and there is no undue loss of fat or protein in the fæces.

3. Asthenia. A complaint of weakness or lassitude is a common early symptom. Whether this can be ascribed to pancreatic asthenia or whether it is a symptom of malignant disease is difficult to say.

4. Constipation. This has been an early symptom in most of our cases and is due to involvement of the cœliac

plexus. Two patients developed ileus in the later stages. Diarrhœa was not common, and in these cases there was an excess of unsplit fat in the fæces.

5. Anorexia. This is of relatively late onset.

6. Vomiting. This is also a very late symptom. Occasionally hæmatemesis and melæna are seen, signifying involvement of the splenic vein with consequent portal hypertension, and bleeding from œsophageal and upper gastric varices or direct spread to the stomach and/or the third part of the duodenum. Melæna may be due to spread to the colon. Rectal bleeding may also occur from varices.

### *Signs.*

The physical signs may be minimal until an advanced stage is reached. The patient usually appears to have lost weight and looks tired and ill. There may be vague deep epigastric or left hypochondrial tenderness. A mass was felt in less than one-third of the cases. In one of these cases the mass showed considerable transmitted aortic pulsation and bruit. It was hard and irregular. Once definite physical signs have appeared, one can be reasonably certain that the disease has spread far beyond the confines of the pancreas.

Hepatic enlargement was found clinically in over two-thirds of the cases, and a palpable spleen was noted in two cases; this was due rather to splenic vein block than to splenic secondary deposits.

Ascites denoting peritoneal metastases and deposits from drop metastases in the recto-vesical pouch are very late phenomena. In one case chylous ascites was present.

Jaundice occurred in four of our cases and was due in all to secondary deposits in the *porta hepatis* and/or massive secondary deposits in the liver. There was no distension of the gall-bladder in any of these cases. Jaundice was a very late phenomenon and preceded death by only a few weeks.

In four cases a left supraclavicular gland was palpable and obviously involved by growth. It is interesting to note that Troisier described involvement of this gland in carcinoma of the stomach. It is our experience that when this gland is involved the primary growth is far more likely to be found in the body of the pancreas than in the stomach. One of our patients presented with this gland involvement as the only sign, and this was treated at another hospital as a secondary deposit from carcinoma of the thyroid.

Two patients showed enlargement of lymph glands in groins and axillæ and neck. Both these patients showed generalized carcinomatosis.

The left supraclavicular node involvement is not unexpected when one considers the close relationship between the body of the pancreas and the *cisterna chyli*—an association far more intimate than that between the stomach and cisterna.

*Thrombophlebitis migrans* in the lower extremities was noted in two cases.

### Reports of Cases.

CASE III.—The patient was an advertising manager, aged fifty-two years, who was admitted to hospital on May 15 and died on November 13, 1951. The signs and symptoms were as follows: (i) mid-epigastric pain, at times radiating towards the left lower costal margin and through to the back, present intermittently since January, 1951, and continuously since April; (ii) the loss of two and a half stone in weight since March; (iii) constipation since April; (iv) weakness and lassitude since April; (v) anorexia since April. The pain was described as deep-seated and boring in character, and not related to meals; it was aggravated by lying down and relieved by sitting up, and was not relieved by food or alkalis.

On examination of the patient slight icterus was present; it was seen that he had lost weight recently. His tongue was coated. A small, firm, left supraclavicular gland was palpated. Epigastric tenderness was present, and a mass across the epigastrium was considered to be the liver. Rectal examination revealed no abnormality. No abnormality was detected on sigmoidoscopic examination. A gastroscopic examination revealed that the wall of the stomach over the upper lesser curve on its anterior aspect appeared to be distorted inwards by what seemed to be an extrinsic mass. An X-ray examination of the chest revealed no abnormality. The serum bilirubin content was 4·8 milligrammes per 100 millilitres, the serum alkaline phosphatase content was 29·6 units, and the thymol turbidity was one unit. A test for occult blood in the fæces gave negative results. X-ray examination with a barium meal revealed no abnormality. The result of Graham's test suggested that the gall-bladder was diseased.

The jaundice gradually increased and the patient's condition was deteriorating when laparotomy was performed on May 28; the findings were carcinoma of the body of the pancreas, secondary deposits in the liver (especially in the left lobe near the mid-line), and a large mass of glands in the lesser omentum. The patient died on November 13.

CASE VII.—The patient was a stock and share broker, aged forty-nine years, who was admitted to hospital on September 15, 1952, with the following complaints: (i) high lumbar pain, more severe on the left side since December, 1951; (ii) the loss of two and a half stone in weight since December, 1951 (weight loss had been rapid since July, 1952); (iii) pain below the left costal margin and near the umbilicus since June, 1952; (iv) constipation since July; (v) anorexia since July; (vi) lassitude since June. The pain was intermittent at first and was described as a continuous deep-seated ache. The patient had been treated for spondylitis for over six months before his admission to hospital. The pain was not related to meals, but was worse at night; it was not relieved by alkalis or food. Prior to his admission to hospital the patient was taking six to eight "Veganin" tablets per day.

On examination of the patient, he looked ill and had lost much weight. He was not icteric, and no mucosal pallor was present. His tongue was coated. No secondary deposits were felt in the neck. In the abdomen no abnormal masses were felt and there was no local tenderness and no ascites. No local spinal tenderness or deformity was detected; the patient complained of pain in the left loin on full flexion of the spine. No abnormality was detected on rectal examination. A sigmoidoscopic examination revealed a sessile fleshy polypus at six inches on the posterior wall. An X-ray examination of the spine revealed no abnormality, and the chest was clear. Microscopic examination of the urine revealed no abnormality. A blood examination gave the following information: the hæmoglobin value was 104% (15·6 grammes *per centum*); the leucocytes numbered 14,200 per cubic millimetre, 71% being neutrophile cells, 2% eosinophile cells, 24% lymphocytes and 3% monocytes. An X-ray examination with a barium enema revealed no abnormality. No abnormality was detected by a plain X-ray examination and intravenous pyelography. X-ray examination with a barium meal revealed that the œsophagus, stomach and duodenum were normal. The urinary diastase content was 3·3 units per millilitre. Examination of the fæces gave the following information: the total fat content was 14·2 grammes (dried fæces), the total split fat content being 5·8 grammes *per centum* and the total unsplit fat content 8·4 grammes *per centum*. The fæcal fat was 40·8% split and 58·2% unsplit. (The normal total fæcal fat content is 15 to 25 grammes *per centum*, 75% being split and 25% unsplit.) The patient was discharged from hospital on November 7, 1952.

CASE II.—The patient was aged sixty years and was admitted to hospital on January 5, 1953, with the following complaints: (i) pain in the epigastric region, present intermittently for eighteen months and constantly for two months; (ii) loss of one and a half stone in weight in eighteen months (weight loss had been rapid in the past two months); (iii) anorexia for three months; (iv) weakness and lassitude for two to three months; (v) pain in the left loin for two months. In 1934-1935 the patient had been subject to preprandial pain, relieved by food, and had a small hæmatemesis; he was regarded as suffering from duodenal ulcer. He had no further digestive trouble until eighteen months prior to his admission to hospital. The pain was deep-seated and boring in character, and at times associated with a feeling of distension; the latter was relieved somewhat by alkalis, but he needed A.P.C. to go to sleep. In the two months preceding his admission to hospital the pain had been relentless and radiated to the left loin; it was aggravated by lying down and by lying on the left side, and relieved by sitting up or lying on the right side.

On examination, the patient looked ill and had lost much weight. He was not icteric and no mucosal pallor was present. The tongue was coated. No secondary deposits were palpated in the neck. Examination of the abdomen revealed guarding of both upper rectus muscles, especially the left; satisfactory palpation was not possible. Percussion revealed no hepatosplenomegaly, and no ascites was present. Rectal examination, a sigmoidoscopic examination and an X-ray examina-

tion of the chest revealed no abnormality. A blood count gave the following information: the hæmoglobin value was 105% (15·8 grammes *per centum*); the leucocytes numbered 7400 per cubic millimetre, 68% being neutrophile cells, 1% eosinophile cells, and 28% lymphocytes, no basophile cells being found. The blood pressure was normal. An X-ray examination with a barium meal revealed no abnormality. No abnormality was detected by a fractional test meal examination or by a gastroscopic examination. The blood sedimentation rate was 19 millimetres in one hour. At laparotomy the findings were as follows: (i) a carcinoma of the body and tail of the pancreas, measuring five by three inches; (ii) multiple small nodular seedlings over the whole of the peritoneal cavity; (iii) involvement of paraaortic and cœliac glands, and glands at the *porta hepatis*; (iv) some distension of the gall-bladder. The patient was discharged from hospital on March 6, 1953.

CASE XII.—The patient was aged sixty-eight years; he was in the defence forces. He was admitted to hospital on May 2, 1952, with the following complaints: (i) diabetes, present for eleven months; (ii) the loss of half a stone in weight in nine months; (iii) pain in the left subcostal region and back for two months. The diabetes had been treated by diet alone. The pain in the abdomen and back was deep-seated and aching in character, and was not related to meals.

On examination, the patient looked ill; he had lost weight. No secondary deposits were detected in the neck. He was not icteric. The abdomen was distended with free fluid; no masses were felt in it. Rectal examination revealed no abnormality. Whilst in hospital he complained of very severe abdominal pain, and on May 12 laparotomy was performed. The findings at operation were extensive chylous ascites, and carcinoma of the pancreas with involvement of neighbouring glands. The patient died on June 22.

### Diagnosis.

The diagnosis must almost invariably be made on a detailed consideration of the history, as physical signs in the early stage are negligible. Full physical examination should include a careful rectal examination to detect a rectal shelf infiltrate from a drop metastasis. The ward urine test may show mild transient glycosuria in some cases. A pyrexial course usually indicates secondary deposits in the liver. Steatorrhœa was seen on only two occasions, with excess of unsplit fat and protein. Evidence of melæna was seen on three occasions. Serum amylase estimations were almost invariably normal. No duodenal enzyme estimates were performed; a review of current literature does not indicate that they are of any practical value. Serum protein estimations were a poor reflection of the state of nutrition of a patient. The blood count revealed a mild secondary anæmia in most cases, and in a few cases leucocytosis was evident. In one of the latter there was an eosinophilia of 50% (the total white cell count was 17,500 per cubic millimetre). The leucocytosis was usually an indication of secondary deposits in the liver. The blood sedimentation rate was frequently elevated and indicated the presence of some organic disorder. X-ray examination, usually by means of a barium meal with or without a barium enema, was most unhelpful. In only one case could deformity of a contiguous organ (the stomach) be made out, and in another gross obstruction of the third part of the duodenum was seen. Widening of the duodenal loop is of course not seen in carcinoma of the body or tail of the pancreas.

X-ray examination of the chest may show evidence of involvement of mediastinal glands or other secondary deposits. In our experience laparotomy has almost always been necessary to make a correct ante-mortem diagnosis. Gland biopsy is not always helpful in determining the site of the primary growth.

### Treatment and Prognosis.

The course of the disease is rapid for a variety of reasons, which will be discussed under the heading of pathology. The average time from the appearance of the first symptom until death was nine months.

The shortest course was two months and the longest twenty-two months. Half the patients failed to survive longer than six months from the date of their first symptom.

In our series of cases the condition was so advanced in all that no treatment even of a palliative nature could be undertaken; splanchnic injection with carbolic acid relieved two patients. In no case was the disease confined solely to the pancreas. Whether this state of affairs can be remedied is doubtful.

A considerable proportion of these cases was misdiagnosed for some months, one patient even having a course of deep X-ray therapy for spondylitis. Frequent barium meal X-ray examinations and other ancillary tests were made on every patient, with negative results. A clinical awareness of the possibility of this lesion might have brought the patients for surgical treatment at an operable stage.

### Discussion.

From the foregoing account it will be seen that this deep-seated and malignant growth is difficult to diagnose and impossible to treat. The diagnosis can be made only by one who is alert and aware of the significance of intractable upper abdominal symptoms, backache, loss of weight and asthenia. He must not be led astray by the absence of physical signs or negative findings from the ancillary aids to diagnosis. This growth must be suspected in anyone with the symptoms described above who is a male in the fourth to sixth decade of life. Final diagnosis usually depends on laparotomy, and this must be performed very early if any progress is to be made in the treatment of the disease.

It is high time that the importance of the incidence of carcinoma of the body and tail of the pancreas was recognized. From the point of view of prognosis it is probably the worst intraabdominal neoplasm, and this state of affairs cannot be improved until we learn more about ætiology and early diagnosis. It is significant that in our series there was an average lag of some six months from the time the patient complained of symptoms until diagnosis was established. This meant that diagnosis was usually established only within a few weeks of death.

With some experience of this syndrome we have been fortunate enough to submit 17 of our 20 patients to laparotomy for confirmation. During this three-year period we have performed only one laparotomy for a suspected carcinoma of the body and tail of the pancreas, which gave negative findings. In actual fact this patient had a peptic ulcer penetrating the pancreas with a large mass in the lesser sac. The other two cases were found accidentally at post-mortem examination.

It would appear that the main problem is to decide when laparotomy is indicated, and it is of some comfort to know that even though one is attempting to confirm a diagnosis of carcinoma of the body and tail of the pancreas, the finding of a chronic penetrating ulcer, carcinoma of the prepylorus, or cholelithiasis with associated pancreatitis usually justifies the exploration, as these may all be best treated surgically.

### Summary.

1. A clinico-pathological description of 20 cases of carcinoma of the body and tail of the pancreas is given.

2. The comparatively high incidence of carcinoma of the body and tail compared with that of carcinoma of the head is noted.

3. The rapid course and poor prognosis are clearly shown.

4. A plea is made for greater recognition of the syndrome.

5. Early laparotomy is recommended.

### Acknowledgements.

We wish to thank the pathologist of the Repatriation General Hospital, Concord, for his assistance with the sections. We also wish to thank the Chairman of the Repatriation Commission for permission to publish the account of these cases.

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## ELECTROTHERAPY IN THE MANAGEMENT OF NEUROTIC ILLNESS.[1]

By DAVID C. MADDISON, D.P.M.,
*Sydney.*

WITH the increasing tolerance towards psychiatry and psychiatrists which is still developing in the community at large, steadily increasing numbers of neurotic patients are seeking some form of assistance in the management of their emotional difficulties and the alleviation of their distressing symptoms. It is accepted almost universally that some variety of psychotherapeutic approach is the technique which is theoretically most desirable in their management, but the obstacles to this theoretical ideal are real and in many cases irremediable. One major difficulty at the present time in this country is found in the grossly inadequate number of medical men with both the training and the time to carry out this work; but even should this obstacle be overcome there will still be found large numbers of neurotics who are too chronically disabled, too elderly, too inadequate intellectually, or too acutely and seriously disturbed to be capable of deriving benefit from a psychotherapeutic approach, at least in the first instance.

This paper deals in substance with the results obtained with the use of electrotherapy in a group of neurotic patients, but it is stressed that it in no way is to be interpreted as a positive advocacy of this form of treatment; the limitations of physical treatment are acknowledged and the desirability of a psychotherapeutic approach is fully recognized. Rothenberg (1953) makes the following statement:

> The psychiatrist who treats a neurosis with shock therapy . . . is disregarding psychodynamics in favour of therapy. He is not treating the patient in terms of the individual, psychogenic factors of his ailment. By just that much he is delaying the evolution of systematised psychiatry as a whole. There is no effective and enduring short-cut psychoanalysis that has been, or for that matter can be, discovered to replace long-term analysis.

This is a statement of policy which, though founded in part on psychiatric truths, places the aims and methods of therapy in neurosis on such an impossibly high level as to amount in practice to an outlook of virtual therapeutic nihilism.

It is not intended here to deal with the various rationales of electro-convulsive therapy, rationales which are still in the completely hypothetical stages, though often expressed as if established by scientific experiment. Current views on these matters have been recently summarized by Ashby (1953) and by Bostock and Phillips (1954). Neither is it intended to deal with the recognized standard indications for this treatment—in psychotic depressions and involutional melancholic syndromes, as a useful adjunct in the symptomatic treatment of schizophrenia and in the control of manic states. Its role in the treatment of neurotic illness has always been more controversial. The early workers in this field were quite adamant that electro-convulsive therapy could only worsen any true neurosis, and these views, only very partially modified, are still widely held and promulgated in the standard text-books on psychiatry, and particularly in texts on dynamic treatment (Sargent and Slater, 1948). In more recent times a considerable volume of work has been done, particularly in the direction of modifications of the type of electrical stimulus applied, in an attempt to bring some type of electrotherapy to the assistance of the neurotic patient. The work of Alexander (1953) in this connexion is best known in this country.

It is proposed to deal with the results obtained with varied methods of treatment of 100 consecutive female neurotic patients examined and treated by me at Broughton Hall Psychiatric Clinic, Sydney. This series is a somewhat selected one, in that the patients with neurosis admitted to a clinic such as this are almost without exception severely disabled and frequently chronically ill, and have often experienced treatment of various kinds from private psychiatrists or in other hospitals prior to their admission to Broughton Hall. I think it is also fair to assume that these neurotics are in one other way not an exact cross-section of the neurotic population, in that they come very largely from the middle and lower income groups. This last factor is important therapeutically, in that a sizable proportion of the patients recorded here lacked the necessary general intelligence and social awareness which would render them candidates for satisfactory psychotherapy.

In the figures given below several terms need clarification. "Recovered" is used in its strict sense to indicate patients who appeared normal and said they were symptom-free at the time of leaving hospital. The term "cured" is not used and is nowhere implied. No long-term follow-up examination of these patients has been possible, though some have been examined for some time after their discharge from the clinic; it is possible that several have relapsed, though none have been in touch with the clinic since their discharge, but even the existence of a relapse rate would not negate the primary ideas expressed in this paper. "Relieved" refers to those patients who still had overt neurotic symptomatology, but who had improved sufficiently for them to resume the employment held prior to their illness and/or generally function on a far more satisfactory level. It equates approximately with the term "social recovery" used by other writers. "Psychotherapy" refers strictly to patients who have received a planned psychotherapeutic programme, analytically orientated, with exploration and interpretation of repressed material; it includes several cases in which "Pentothal Sodium" or "Methedrine" was used intravenously to facilitate therapy. Under the heading "no special treatment" are included patients who received sedation, rest, psychotherapy of a most superficial kind, insulin in tonic doses, vitamins and other non-specific therapies as indicated in the individual case. "Mixed neurotic states" refers to those patients who could not reasonably be placed in any of the categories preceding them in the tables — involved conditions showing elements of depression, hysteria, obsessional symptomatology and anxiety in various proportions. "Carbon dioxide" refers to Meduna's so-called "pharmacodynamic therapy", which my experience leads me to regard as simply an occasionally useful abreactive technique.

Patients listed as receiving electrotherapy had, except where indicated later, no other specific therapy; superficial discussion of their problems, minor attempts at environmental manipulation, mild sedation *et cetera*, were used when indicated, but these were invariably employed at the end of their period in hospital to consolidate the recovery or relief of their symptoms which had been obtained by specific therapy.

It will be observed that the total figures for those neurotics who received electrotherapy (73), contrasted with those who did not (27), show that 61 of the former received considerable benefit, including 23 fully recovered, while in the latter group 20 received considerable benefit, including six fully recovered. These figures in such a small series have no statistical significance and certainly do not prove or attempt to prove that electrotherapy is a superior treatment in neurotic illness to psychotherapeutic or other dynamic techniques; but they do show beyond doubt that results were achieved with electrotherapy equal, at least in the short-term view, to those obtained with other techniques.

[1] Based on a paper read at a meeting of the Australasian Association of Psychiatrists at Broughton Hall Psychiatric Clinic, Sydney, on October 14, 1953.

TABLE I.
*Treatments Employed.*

| Diagnosis. | Number of Patients. | Received Electrotherapy. | No Electrotherapy. | Carbon Dioxide. | Psycho-therapy. | No Special Treatment. | Subcoma Insulin Therapy. |
|---|---|---|---|---|---|---|---|
| Anxiety state | 14 | 7 | 7 | 0 | 3 | 4 | 1 |
| Anxiety hysteria | 30 | 25 | 5 | 0 | 3 | 2 | 3 |
| Conversion hysteria | 15 | 5 | 10 | 4 | 5 | 3 | 1 |
| Obsessional neurosis | 4 | 4 | 0 | 0 | 1 | 0 | 0 |
| Neurotic depressive state | 34 | 29 | 5 | 0 | 2 | 3 | 0 |
| Mixed neurotic state | 3 | 3 | 0 | 0 | 0 | 0 | 1 |
| Total | 100 | 73 | 27 | 4 | 14 | 12 | 6 |

The most satisfactory section of the figures deals with the so-called "neurotic depressive" group, in which all patients who received electrotherapy gained significant improvement. This is against the experience of some other therapists, and it is tempting to suspect that these cases were in fact mild instances of a psychotic reaction; the difference between a neurotic and a psychotic depressive reaction is admittedly not always easy to clarify, but it is maintained that in the vast majority of depressive episodes observed over a sufficient period the distinction can actually be made. The following history indicates the type of illness considered under this heading, and illustrates a most satisfactory result.

TABLE II.
*Patients Receiving Electrotherapy.*

| Diagnosis. | Number of Patients. | Re-covered. | Relieved. | Not Improved. |
|---|---|---|---|---|
| Anxiety state | 7 | 0 | 5 | 2 |
| Anxiety hysteria | 25 | 7 | 11 | 7 |
| Conversion hysteria | 5 | 1 | 3 | 1 |
| Obsessional neurosis | 4 | 2 | 0 | 2 |
| Neurotic depression | 29 | 13 | 16 | 0 |
| Mixed neurotic state | 3 | 0 | 3 | 0 |
| Total | 73 | 23 | 38 | 12 |

CASE I.—The patient was a married woman, aged thirty-two years, who gave a history of gradually increasing depression and sleeplessness for the preceding twelve months, with rumination on suicidal themes. She had been regarded as over-emotional and somewhat hypochondriacal for many years, but had shown no major difficulties in adjustment prior to the present illness. She was one of six children; her paternal grandfather and uncle both committed suicide. Her father was described as a "sex maniac" and a heavy drinker, who would spy on his adolescent daughters in the bathroom and attempt when inebriated to fondle them; the patient felt considerable contempt for her mother because she tolerated this behaviour, and thus tended to withdraw from her family group and never established satisfactory affective ties with them. She married at the age of nineteen years; five years subsequently her husband had a "stroke", which left him with a withered hand, and this led to a revulsion from any physical contact with him. She had committed adultery with another man, who was desirous of marrying her. She contemplated divorcing her husband, but was not prepared to sacrifice the care of her children. She was frigid in sexual relations.

On examination the patient was considerably depressed and lachrymose, but showed no retardation or any psychotic disturbance of ideation. She had full realization of the nature of her illness. No intropunitive ideas were expressed. She was given a course of seven electro-convulsive treatments and obtained complete remission of her symptoms. Only at this stage was any attempt made to give her any assistance with her personal problems and environmental difficulties, and an excellent recovery was consolidated. She reports her progress since leaving hospital as quite satisfactory.

In hysteria, anxiety hysteria and some anxiety states the results have been at times surprisingly satisfactory. The following case illustrates the benefit obtained with an acutely disabled anxiety hysteric.

CASE II.—The patient was a married woman, aged twenty-seven years, who had shown increasing symptoms of neurosis for eighteen months. She gave florid and dramatic descriptions of somatic discomforts couched in characteristic terms—for example, "a boiling feeling in the head". She had an acute fear of death, especially cardiac, and interpreted various minor paræsthesiæ as evidence of impending heart failure. She was seriously anorexic and sleepless, had lost three stone in weight and now weighed six stone five pounds. Her history showed that she was fixated on a somewhat unstable father, who was at times cruel to her, and who

TABLE III.
*Patients Receiving No Electrotherapy.*

| Diagnosis. | Number of Patients. | Re-covered. | Relieved. | Not Improved. |
|---|---|---|---|---|
| Anxiety state | 7 | 2 | 5 | 0 |
| Anxiety hysteria | 5 | 1 | 1 | 3 |
| Conversion hysteria | 10 | 2 | 5 | 3 |
| Obsessional neurosis | 0 | 0 | 0 | 0 |
| Neurotic depression | 5 | 1 | 3 | 1 |
| Mixed neurotic state | 0 | 0 | 0 | 0 |
| Total | 27 | 6 | 14 | 7 |

eventually died of heart disease. Her mother was a rigid, obsessional person, who showed her little affection. When the patient was aged seventeen years, both parents died, and she was cared for by an avaricious aunt. She made a reasonably compatible marriage at the age of twenty years, though her husband was thoughtless in small ways. She claimed to have adequate sexual gratification. Her first pregnancy ended in a still-birth, which was followed by the birth of a living child, who was aged four years at the time of her admission to hospital. Her most recent obstetric experience terminated in a missed abortion, and it was this event which precipitated her acute symptoms.

On examination of the patient, the diagnosis of anxiety hysteria seemed quite plain. There was no evidence of any psychotic traits. She was acutely disturbed and followed the medical officer on his rounds, repeatedly seeking reassurance. No satisfactory psychotherapeutic relationship could be established with her, owing to her complete inability to extend her field of interest past her immediate symptoms and fears. She was given two electro-convulsive treatments and claimed that she was perfectly well. She was moved to a convalescent ward and all her symptoms returned, whereupon she was given three further electro-convulsive treatments and her improvement was consolidated. She was discharged from hospital, symptom-free, and was known to be in the same state twelve months later.

The following case illustrates benefit obtained in a case of hysteria.

CASE III.—The patient was a married woman, aged forty-six years, who had been complaining of abdominal pains, irritability and general "nerviness" for some five years. Two months prior to her admission to hospital she had developed a plethora of symptoms, including flaccid paralysis of the

right leg, vomiting, headaches, mental confusion and transient blindness. Investigation of these symptoms in her local country hospital had shown no organic basis, and she was transferred to Broughton Hall Psychiatric Clinic. When examined there, she had lost her gross organic signs except for a mild degree of paresis in the right leg, which appeared of functional nature, and she complained chiefly of headaches, vomiting and irritability. There was only a very mild depressive aspect to the illness, and she was invariably cheerful at interviews, and gave an excellent account of herself. X-ray examination of the skull, an electroencephalographic examination, a barium meal X-ray examination, and cerebro-spinal fluid studies all gave normal results. The patient's first marriage had been unhappy owing to her husband's gambling and his failure to support her, and she had left him some six years prior to her admission to hospital and lived with another man, with whom she was deeply in love, and who had married her only a year previously. Their marriage seemed very happy, though she was sexually unresponsive. There was acute domestic overcrowding, which distressed her greatly.

Five electro-convulsive treatments were applied and immediate and complete symptomatic relief was obtained. Owing to a domestic emergency she returned home without an adequate period of convalescence and supportive treatment, and shortly afterwards had a minor recurrence of symptoms, which lasted for about a fortnight; but this settled down spontaneously, and since then both the patient and her husband state that she is "better than for years".

It is suggested by several clinicians, notably Campbell (1950), that conditions similar to the foregoing, which respond so spectacularly to electro-convulsive therapy, are in fact examples of mild manic-depressive reactions. It is without doubt true that the so-called "masked depressions" can be easily mistaken for a psychoneurotic reaction at the first interview; but it seems unreal to postulate that complete response of a psychiatric illness to electrotherapy indicates *ipso facto* that the condition was primarily a depressive episode. In the absence of complete understanding of the mechanism or action of electrotherapy we cannot say what conditions should and what should not respond to treatment; but by adequate clinical recording we may gradually add to the sum of experience in this field.

Combinations of treatments have, of course, been used in certain cases; but it is important to note that in only two cases in this series was any significant relief of symptoms obtained by other means when electrotherapy had failed. One of these patients was an extremely severely obsessional neurotic who obtained a complete remission of symptoms from prolonged psychotherapy; the other was an hysterical ataxic who was relieved by psychotherapy, which included interviews under "Pentothal Sodium" neurosis. On the other hand, several patients in this series, initially considered unsuitable for electrotherapy, made a satisfactory response to it after the failure of other dynamic treatments and of psychotherapy. Five patients received electro-convulsive therapy and prolonged psychotherapy; two of these improved after deriving no benefit from electro-convulsive therapy, in one the improvement seemed almost equally attributable to either approach, and two chronic neurotics received no benefit from either form of therapy. Of the seven patients who received psychotherapy alone, three recovered fully and four were considerably improved. It is stressed that these were carefully selected patients.

My experience with non-convulsive electrotherapy has been limited and to date unsatisfactory, and it has never succeeded in my hands when other treatments have failed. Alexander (1953) claims to have obtained superior results in states characterized by anxiety with depression with either non-convulsive or combined convulsive and non-convulsive treatment; but I am not aware of any controlled series which establishes the superiority of these techniques over routine electro-convulsive therapy in the management of neurotic illness.

The routine use of electrotherapy for psychiatric illness, without consideration of the total personality of the patient, his life history, his environmental stresses, his basic needs and his unconscious motivations, cannot be too strongly deplored. Electrotherapy must be part of a planned therapeutic régime, given deliberately, not desperately, and with the diagnosis established as accurately as possible and the clinical results faithfully recorded. So employed, it is a valuable, though still grossly imperfect, tool to aid us in bringing relief to the neurotic patient.

### Summary.

1. The results of treatment in 100 cases of severe neurosis are discussed, and it is pointed out that results were obtained with electrotherapy equal to those obtained by the use of other forms of treatment. It is not suggested that this present series of cases has produced figures which have statistical significance.

2. Whilst the general validity of many psychoanalytic concepts of mental illness is not denied, it is unrealistic to deny physical methods of therapy to those vast numbers of patients who for one of many reasons are unable to receive psychoanalysis or prolonged psychotherapy.

3. Electrotherapy must be regarded as one possible weapon in the management of the neurotic patient. Further recording of unbiased clinical observations will aid in differentiating those syndromes in which it can give maximal assistance.

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## THE SCHIZOGENIC MOTHER.

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FEW things bring out the differences of psychiatric opinion so well as a discussion of the ætiology of schizophrenia. The "organicist" will focus his interest on recent work on endocrines, particularly the adrenal cortex; the Kraepelinian traditionalist will invoke that blessed word "constitution"; the orthodox Freudian will speak of narcissism and the mechanism of regression. While much of the work of the organic school has proved barren and inconclusive, the speculations of the adherents of psychogenic theory have not been beyond reproach either. It would appear that they have very often not touched on the problem of causality; and their speculations on narcissism, regression to an auto-erotic level, and the resultant imbalance between ego, superego and id strength deal with the subject on a purely descriptive instead of an explanatory level. In other words, the psychopathologists tell us how the patient is ill, not why he is ill.

If we wish to carry the problem of causation a little further and are committed to environmental ætiology, the study of interpersonal relationships should be able to take us there. It is the group of heterodox psychoanalysts (or "fellow-travellers") such as Harry Stack Sullivan, Bradley, Rosen and others who have concentrated on this aspect of

the problem. And there is no doubt of the magnitude of the problem of schizophrenia. To my mind it is one of the three main problems in psychiatry today, the other two being senility and chronic alcoholism.

It was E. Fromm-Reichmann who first coined the word "schizophrenogenic mother". Others have considered the possibility of the personality of the parent, through early contact with the child, producing a certain imprint on the child's personality. Systematic study of the mother of schizophrenics appears to have started in 1934, with a paper by Kasanin, E. Knight, and Sage. Louise Despert studied 29 schizophrenic children. In 19 instances the mother was aggressive, over-anxious or over-solicitous. Another study is that of L. Haydn-Gimes; he found a predominance of rejection among the mothers. Leo Kanner's views on the ætiology of early infantile autism, a condition which must be considered to be closely related to schizophrenia in its dynamics, are well known. He mentioned that all the parents of his patients are cold people, unable to supply natural affection to their children. T. Tietze noted a strong obsessive component in the mothers of schizophrenic patients. They were also uniformly domineering—10 overtly, 15 covertly. This underhand domination is a feature that will be referred to later. S. Reichard and C. Tillman, reviewing the literature in May, 1950, abstract the three following patterns: (i) an overtly rejecting mother *plus* a weak, ineffectual father; (ii) a covertly rejecting mother *plus* a weak, ineffectual father; (iii) a cruel, sadistic father *plus* a passive, dependent, ineffectual mother. The first two patterns were examples of the schizophrenogenic mother, the third of the schizophrenogenic father. Common to all these is the absence of genuine love.

The most obvious criticism that can be directed against all the preceding studies is the complete absence of controls. One wonders what the various observers' criteria for over-protectiveness, covert domination, or "genuine love" might be. These categories, though self-explanatory, are difficult to define and hence admit of wide interpretation. One wonders how many mothers of normal controls would be classified as over-protective or domineering, and how much of the over-protection or rejection, on the other hand, was due to the impact on the mother of the patient's illness and stay in hospital, and how much represented a basic and long-standing maternal attitude.

C. T. Prout and M. A. White attempted to deal with this problem of controls. They investigated 25 mothers of young schizophrenic males and 25 mothers of young males from the community. The latter were not admitted to hospital (unlike the schizophrenic males) and were considered to be making an adequate adjustment. They collected biographical, Rorschach and attitude data. The results were not remarkable in the first two types of data. The Rorschach findings showed the mothers of schizophrenics to have less drive, smaller capacity for empathy, less emotional stability. There were some interesting differences in the attitude data, the main one being that the "control" mothers were often critical of their sons, yet satisfied with their achievements, while the "experimental" mothers tended to report their offspring as either the "best child" or the "most disturbing". Remembering that the fact of illness and admission to hospital may explain many differences in the attitudes of the two groups, the authors are very cautious and conservative in their conclusions. They feel, however, that the mothers of schizophrenics, because of their own personality problems, may have attempted "to live out their own emptiness in the lives of their stand-in sons".

One of the criticisms that can justifiably be levelled against much psychopathological theory is that it ignores certain laws of causality. In particular do I mean the law that different effects presuppose different causes. It is distressing to read that neuroticism, psychopathy and schizophrenia result from parental discord, rejection and spoiling, and lead to conflict, ambivalence and Œdipal fixation in quite an indiscriminate fashion. This may be an unjustly severe indictment of psychopathological theory, but it must be admitted that the specificity of cause and effect is not always observed, and a single cause is often stated to have two quite different effects without the intervention of a second causal factor. As long as such loose speculation is permitted, psychopathology cannot become a science.

Having the specificity of causes in mind, we wished to investigate whether any difference could be detected in the attitude data of the mothers of schizophrenics and the mothers of neurotics. It is when the ætiology of these conditions in particular is discussed by those who believe in psychogenesis that a confusion of causes arises. The preschizophrenic and the preneurotic personality are both stigmatized as immature, vulnerable, mother-attached, with many unresolved conflicts; and when we examine critically any differentiating signs they are often early symptoms of the evolving illness—for example, increasing social withdrawal, heightened tension. To make a clear-cut differentiation between the two groups is, as a rule, not difficult at the height of the illness (there are, of course, many exceptions, but they do not affect the real point, that there is a fundamentally different condition); therefore, if psychogenic factors are of critical importance, there should be clear and essential differences in those psychic factors—namely, parental attitudes. Whether such essential differences can be demonstrated is the question that this study seeks to investigate.

### Method and Difficulties.

Between January, 1952, and June, 1953, some 90 patients admitted to the "psychotic" ward at the Repatriation General Hospital, Concord, were diagnosed as suffering from schizophrenia. It was, of course, not supposed that anything like that number could be studied, and when the available data were examined only 32 patients could be included in the experimental group. First of all a small number had to be excluded because there was some slight doubt as to the correct diagnosis. However, the majority had to be deleted because of insufficient data about the mother's early attitude. Although it is our practice to obtain a full social history from at least the nearest relative, there were many cases in which no such history could be obtained. In others a history from the wife would fail to throw any light on the early interpersonal relationships; yet others were excluded because they were never subjected to any maternal influence, through death or very early boarding out.

In the course of my work with schizophrenic patients I was struck by the frequency of pathological mother-son relationships in the history and by the gross morbidity of this relationship at times. The mother's influence seemed to be all-pervasive, and often constituted a problem in managing a patient. It is extremely difficult for a social worker or doctor to help the relative of a psychotic patient with her own problems when she or he feels that this relative has been intimately associated with the basic dynamics of the patient's condition. To coin a neologism, I have called this type of parent a "smother". "Smothering" denotes an element of hostility: a deep-seated ambivalence in which hostility is over-compensated for by an extreme possessiveness and reluctance to accept the son as an adult, and therefore emancipated from the maternal figure. This concept of "smothering" is very similar to what Kanner describes as compensatory over-protection. I thought it worthwhile, however, to introduce a category of over-protective maternal attitude different from the foregoing. By this I mean an attitude which is at once less morbid as well as qualitatively different. By "over-protectiveness" I mean an attitude compensatory to adverse circumstances outside the mother—for example, paternal harshness and cruelty, or financial hardships. The basic element of hostility is lacking in this attitude and the ambivalence is not present. I consider that this is a much less pathological attitude than "smothering" and feel that it leads to dynamically different results. It has been interesting to observe that "smothering" has nearly always produced counter-hostility in the schizophrenic son, and that this

hostility has often figured prominently in the symptomatology of his psychosis. This result has not been obvious in the cases of simple over-protectiveness.

The third morbid category of maternal attitudes has been labelled as "rejection". This is almost self-explanatory; but it should be remembered that, apart from total physical rejection or boarding out, it includes such phenomena as coldness, lack of affection, perfectionism without adequate emotional recompense, nagging, aloofness, and indifference in the mother. While complete physical neglect is rare, coldness and perfectionism are common. We found that we had little difficulty in deciding whether to classify an attitude as rejecting in a given case.

One of our major problems when inspecting our historical data was to decide what our criteria of a normal mother-son relationship should be. It was found that there was rarely any positive evidence of a normal relationship, and one had to be guided by the absence of signs of abnormality in the presence of a full anamnesis. It is necessary to stress the need for a full anamnesis, because any cases in which there was lack of data about the patient's early domestic background were excluded from the experimental series. Much depended on the social worker's interpretation, of course, when the mother was the informant. When there was another informant some of the interpreting would have been done by this third party, generally a biased one such as the wife or sister of the patient. It was hoped that these factors might to some extent be controlled in the neurotic group, but, as will be seen, this was not possible, as in most of our control group the informant was the wife, whereas in the experimental group mostly our informant was the mother.

TABLE IA.

| Informant. | Schizophrenic. | Neurotic. |
|---|---|---|
| Mother alone | 13 | 5 |
| Mother and father | 4 | — |
| Mother and sibling or siblings | 3 | — |
| Mother and wife | — | 1 |
| Father alone or with siblings | 4 | 1 |
| Siblings | 3 | — |
| Wife and father or siblings | 1 | — |
| Wife alone | 4 | 25 |
| Total | 32 | 32 |

Table IB shows the extreme divergence in the marital status of the groups. It is not to be thought that the high percentage of single men among the schizophrenics is typical of our schizophrenic group as a whole; but it merely indicates that data on early mother-son relationships were more likely to be available among the single men. The high percentage of married neurotics would be fairly representative of our neurotic population as seen at the Repatriation General Hospital, Concord.

### Discussion.

The most obvious criticism is that comparison between the two groups is invalid because of the different data-getting; most of the information about the schizophrenics is second-hand, while the majority of the information about the neurotics is third-hand. This objection is, of course, quite relevant, and renders irrelevant any statistical treatment of the results in Table II. It is, however, not without significance that the schizophrenic group is pr dominantly single, whereas the neurotic group is largely married; and some people would argue that this difference in status constitutes greater psycho-sexual maturity in the neurotics, and presupposes a more normal mother-son relationship in them. There is no reason to suppose, again, that among the considerable number of married schizophrenics not included in this series because of lack of relevant data the earlier mother-son relationship was any better than in the experimental group. Despite all this, it must be admitted that the hypothesis I set out to investigate remains unproven, and the concept of the schizogenic mother is still far from being a psychiatric verity. The phenomenon of "smothering" is by no means specific to the mothers of schizophrenic patients, as can be seen from our figures. On the other hand, if the figures mean anything, they suggest a significant difference in the percentage of normal attitudes. The majority of pathological attitudes in the experimental group come under the heading of simple over-protection, as defined above. A small point that seems to emerge from the above figures is that rejection by the mother does not appear to any greater degree in either group. This attitude appears to lack specificity altogether.

If a psychogenic theory of schizophrenia is to be persisted with, it would seem necessary to study more complex factors than pure maternal attitudes. I am wondering whether the total pattern of parental attitudes may not be a worthwhile object. Certainly such patterns are more

TABLE IB.

| Marital Status. | Schizophrenic. | Neurotic. |
|---|---|---|
| Single | 27 | 4 |
| Married | 5 | 26 |
| Divorced or separated | — | 1 |
| Widower | — | 1 |
| Total | 32 | 32 |

difficult to classify, and this will cause one to be tempted to break them down into their constituents; but it is probable that the more we do this, the less significant our results will be. On the other hand, I do not believe that we can quantify total situations: to study these we would have to abandon our nomothetic approach altogether.

Another feature this study points out is the shortcomings of our anamneses when required for investigations of this kind. It has been suggested that fresh material should have been selected for the specific purpose of this study;

TABLE II.

| Subjects. | Maternal Attitude. | | | |
|---|---|---|---|---|
| | "Normal." | Over-protective. | "Smothering." | Rejecting. |
| Schizophrenics | 2 | 15 | 9 | 6 |
| Neurotics | 16 | 5 | 5 | 6 |

this, however, may lead to the well-known result that we find the things we look for. In other words, we are guided by our theoretical preoccupations in the collection of the data, which thus become selective and prove our hypothesis for us. When one is dealing with material the evaluation of which is largely a subjective process, the danger of unconscious prejudgement is very great.

I hope that this work, in itself trivial and inconclusive, will stimulate others to do better. Originally we intended to study a control group of manic-depressive patients as well, but insufficiency of material prevented us. It is my belief that manic-depressive psychosis is a process dynamically unrelated to early mother-child relationships. It may be possible for someone who has access to mental hospital material to verify or refute this assumption. I am also hoping that bigger and better-controlled groups of schizophrenic and neurotic patients will be studied along the foregoing lines, with ultimately a statistical evaluation of the results. This is necessary because, while most psychiatrists believe in multiple ætiology, they differ considerably in their estimation of the relative importance

of the various factors, constitutional, organic, and environmental or psychogenic. One would want to know quantitatively what loading to give to these factors before proceeding prognostically and therapeutically with any degree of confidence. Nobody would deny that we all would be happier practitioners if we could base our work on a sound, scientific theory of the ætiology of schizophrenia.

### Summary.

1. An account is given of the emergence of the concept of the "schizogenic mother", and the concept is restated.

2. The results of studying a group of mothers of 32 young schizophrenic males controlled by a similar group of mothers of neurotics are given. The difficulties in methodology are described.

3. A plea is made for further studies of this kind to gauge the probability of this hypothesis.

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## THE PRESENT STATUS OF SYPHILIS IN AUSTRALIA: A CLINICAL, NOT STRICTLY STATISTICAL, STUDY.

By CHARLES ENGEL,

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As a student of medicine I have been taught that in the attempt to elucidate the ætiology of any kind of disease we have to keep the possibility of syphilis always in mind. In the first decades of the present century syphilis was a very widespread, severe and ominous disease almost everywhere on the globe. It was the opinion of the best experts in this field that the most energetic treatment with mercury, bismuth and "Salvarsan" could not prevent the development of the most serious late manifestations. Syphilis could appear in the mask of any disease at any age; it was rightly called "The Great Imitator". No wonder that the teachings of the great clinicians of that time included such statements as the following: "He who knows syphilis in all its phases, knows medicine" (Osler); "Where you are thinking the least of syphilis, there you have to think of syphilis" (Jendrassik).

For the population of the large cities of Europe, the incidence of syphilis has been estimated as 10% to 15%, even up to 20% for Berlin (Blaschko, 1918). Hazen in 1928 estimated the number of persons with syphilis in the United States of America as 8,000,000, Parran and Vonderlehr in 1941 as 3,200,000. At my hospital in Budapest we checked the incidence of positive Wassermann reactions in 1000 unselected consecutive out-patients (500 men and 500 women) on two occasions, in 1928 and in 1937; in both years it was, to our great surprise, just the same—17% (10% in women, 24% in men).

Syphilis was in those times really one of the "captains of the Men of Death", especially in the form of neuro-syphilis (paresis of the insane), and even more so in that of cardio-vascular syphilis. Cardio-vascular syphilis in itself claimed incomparably more victims than all the other manifestations of syphilis together, and cardio-vascular syphilis was "ubiquitous, insidious, disastrous" (Stokes, 1944). Many thousands died from it in every country with a large population; for example, Parran estimated that the number of victims of this disease in 1937 was 40,000 in the United States of America, and the saddest thing for the community was that the victims were mostly in the age of greatest economic productivity. The incidence of cardio-vascular syphilis has been estimated as 5%, 10%, 15% and 20% of the cardiac cases in the hospitals and clinics, and it has been found responsible for the same percentage of all cardiac deaths (Romberg, 1918; Jagic, 1927; Stadler, 1912; Hazen, 1928; Christian, 1947; and others).

What is the picture at the present time? In the post-war years it has changed very much for the better. Since the end of the second World War the incidence of early syphilis (primary and secondary syphilis) declined remarkably in most parts of the civilized world.

Figure I illustrates this fact spectacularly for the United States of America and for the United Kingdom (Willcox, 1953; Ministry of Health, London; and United States Public Health Department).

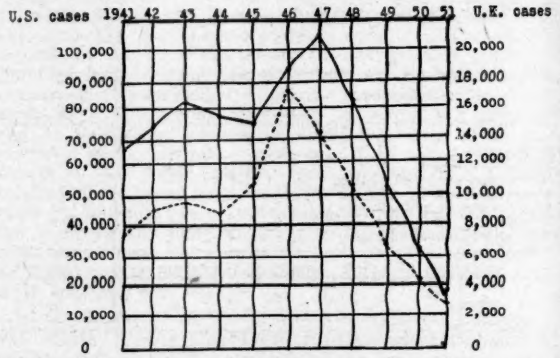


FIGURE I.

*Decline in the incidence of syphilis. Continuous line,* scale on left, Continental United States of America: primary and secondary syphilis. Interrupted line, scale on right, England and Wales: syphilis in first year of infection. United States fall from 1947 peak, 82·9% in four years. United Kingdom fall from 1946 peak, 87·1% in five years.

Figure I is compiled from the figures shown in Table I.

The sharp decline in syphilis in both nations is stupendous indeed. This can be attributed mostly to penicillin, which surpasses all previous antisyphilitic agents in safety and, what is even more important and decisive, in rapid effectiveness. Nowhere has the decline in early cases so far been accompanied by a similar fall in the incidence of latent and late syphilis. In England and Wales, for example, the number of these patients attending the treatment centres was higher in 1950 than it was in 1946 (McElligot, 1953). From the United States of America a fall of 64·8% is reported in eight years (Willcox, 1953); and the fall in the estimated mortality rate in the continental United States of America is also very remarkable. Per 100,000 of population it fell from 11 in 1940 to 4·5 in 1951. I have worked in the field of cardio-vascular syphilis for many decades, and I must confess that I got the surprise of my professional life when I received the following letter from the Mayo Clinic in answer to my inquiry regarding the incidence of cardio-vascular syphilis in the clinic (Kernohan, 1953):

TABLE I.

| Year. | United States of America. | United Kingdom. | Year. | United States of America. | United Kingdom. | Year. | United States of America. | United Kingdom. |
|---|---|---|---|---|---|---|---|---|
| 1941 | 67,985 | 7,332 | 1945 | 77,007 | 10,746 | 1949 | 54,268 | 6,812 |
| 1942 | 75,704 | 9,046 | 1946 | 94,957 | 17,675 | 1950 | 32,250 | 4,143 |
| 1943 | 82,230 | 9,642 | 1947 | 106,594 | 14,166 | 1951 | 18,211 | 2,372 |
| 1944 | 78,418 | 8,778 | 1948 | 80,528 | 10,637 | | | |

I might say that we rarely see syphilitic aneurysmata in this part of the country. We used to see them occasionally but I do not believe we see one in every two years in recent times.

Syphilis has never been such a widespread or sinister disease in Australia as in Europe or America. It has never been the menace to the public health that it has been elsewhere on the globe, in spite of the fact that the population is massed in big seaport cities, a circumstance which is usually very favourable for the spreading of the disease.

What is the present status of syphilis in Australia? Can we fix it precisely? Or can we give at least an approximate estimate? I firmly believe that the answer to the second question is in the affirmative. A one-day survey or cross-section has never been taken; such elaborate measures of case finding, of contact tracing, as, for example, those used in the United States of America, have never been carried out. However, I feel sure that we can get an approximate, but for clinical use a serviceable, estimate of the present status of syphilis in Australia if we assemble all the reliable data and then integrate them as a whole. These data are the following: (i) Number of notified cases of syphilis. (Syphilis is a notifiable disease in every State of Australia except South Australia), (ii) Incidence of syphilis at post-mortem investigations, especially the finding of cardio-vascular syphilis. (iii) Mortality rate of syphilis in the official statistics.

Let us take them in due order. Table II shows the number of notified cases of syphilis (early syphilis—that is, primary and secondary syphilis—and the total number of cases of syphilis).

TABLE II.

| State. | 1948. | 1949. | 1950. | 1951. | 1952. |
|---|---|---|---|---|---|
| New South Wales: | | | | | |
| Early .. | 618 | 507 | 342 | 190 | 209 |
| Total .. | 1107 | 1033 | 627 | 443 | 486 |
| Victoria: | | | | | |
| Early .. | 112 | 103 | 92 | 92 | 78 |
| Total .. | 416 | 381 | 439 | 281 | 218 |
| Queensland: | | | | | |
| Early .. | 118 | 126 | 103 | 125 | 108 |
| Total .. | 233 | 203 | 176 | 205 | 187 |
| Western Australia: | | | | | |
| Early .. | 27 | 12 | 13 | 49 | 21 |
| Total .. | 63 | 31 | 29 | 66 | 39 |
| Tasmania: | | | | | |
| Early .. | 58 | 39 | 25 | 12 | 9 |
| Total .. | 78 | 81 | 42 | 45 | 28 |

We see from Table II that the number of notified cases of syphilis has declined in every State of Australia without exception. This holds as much for cases of early syphilis as for all cases of syphilis ("total"). The decrease is not equally great in every State; it is most spectacular in New South Wales and Tasmania. It is obvious that the decline of the "total" number of cases is attributable in the first place to the decrease in the early cases of syphilis.

Figure II illustrates this decrease for New South Wales and Tasmania. We see from Figure II that the decline in both States is of a form similar to, though not so steep as, that observed in the United States of America and England.

Figure III shows the decline in the number of all notified cases of syphilis and in that of early syphilis for the whole of Australia.

We see that the decline in early syphilis is not so great as in the United States or the United Kingdom, nor even so spectacular as in New South Wales or Tasmania.

H. H. White (for the Acting Director of Public Health, Port Moresby) has advised me by letter that "no cases of syphilis have been reported for the Territory and New Guinea for years". The reason for this surprising fact is probably the infestation of the population with yaws, which apparently gives an almost complete immunity against syphilis.

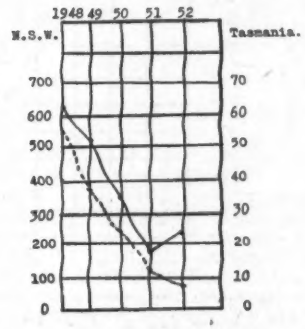


FIGURE II.

*Decline in the incidence of syphilis, New South Wales and Tasmania. Continuous line, New South Wales; interrupted line, Tasmania.*

Roughly about half the notified cases are reported from the public health clinics and from the university clinics and hospitals, and the other half from private practice. It is therefore almost certain that the number of cases of syphilis is in reality larger than Figure III shows. It is very probable that the same holds for Australia, as has been demonstrated almost everywhere else, that where syphilis is a notifiable disease (emphasized especially in the United States of America), patients under the care of private practitioners are often not reported for fear of disclosure (Brunsting, 1953).

Let us examine the figures for cardio-vascular syphilis found in the post-mortem room.

In the first place I have to mention the very valuable figures of Cleland (Royal Adelaide Hospital), as we have in his reports the findings of more than 7000 necropsies performed by the same investigator over more than thirty years.

Palmer (Sydney Hospital) found for the years 1935 to 1940 an incidence of 1·61%, and for the years 1940 to 1947 an incidence of 1·63%. In continuation of these investigations, Finlay-Jones found at the same hospital in the years 1947 to 1952 an incidence of 1·04%.

McGovern (Royal Prince Alfred Hospital, Sydney) found in 1823 necropsies from 1947 to 1952 an incidence of 1·04%.

Duncan (Hobart) found in 1880 necropsies from 1935 to 1948 an incidence of 1·06%, and in 2022 necropsies from 1948 to 1953 an incidence of 0·89%.

All the above-mentioned figures are about the lowest one can find in the literature of recent times. In 1935 (International Congress of Dermatology in Budapest) I collected the data of seven authors; their figures ranged from 2·1% to 11%. The figures in the recent literature are in the region of the lowest ranges of these statistics.

Of course, the figures for cardio-vascular syphilis found at necropsies do not indicate that the cause of death was

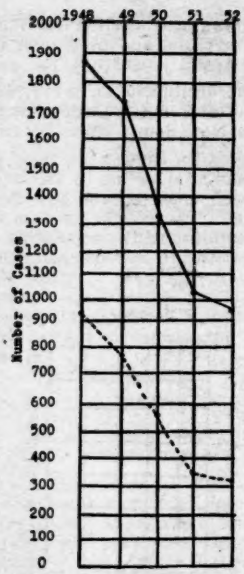


FIGURE III.

Decline in the total number of cases of syphilis and in that of early syphilis for all Australia. Continuous line, total number of cases; interrupted line, early cases.

in every case cardio-vascular syphilis in itself. The general experience of the pathologists is that only in one-third of the cases was the cardio-vascular syphilis discovered the real cause of death (Welty, 1932).

TABLE III.

| Group of Necropsies. | Percentage in which Cardio-vascular Syphilis was Found. |
|---|---|
| 1600 necropsies from 1920 | 3·2 |
| Second thousand .. .. | 4·0 |
| Third thousand .. .. | 2·1 |
| Fourth thousand .. .. | 2·9 |
| Fifth thousand .. .. | 2·8 |
| Sixth thousand .. .. | 1·8 |
| Seventh thousand .. .. | 2·1 |

The collected data for the incidence of cardio-vascular syphilis found at necropsies will confirm the statement made in the introduction, that syphilis has never been so widespread or so ominous in Australia as it was in Europe or America.

Figure IV shows the mortality rate in the official statistics of Australia (1935 to 1951). In Table IV are given the figures from which this graph was compiled.

The figures are surprisingly low. In the official statistics (limitation of space prevents me from giving them in detail), the causes of death from syphilis are specified as "locomotor ataxia, paresis of the insane, aneurysmata, congenital syphilis" and "others". More than half the cases are attributed to aneurysmata; then follow in decreasing order "others", paralysis, tabes, congenital syphilis.

Can these data about mortality from syphilis be regarded as correct? Or are more people dying from syphilis than is indicated in the official statistics? I

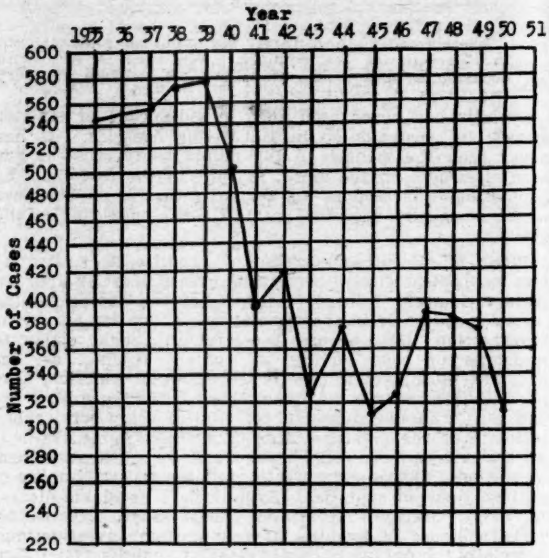


FIGURE IV.

The mortality rate in the official statistics of Australia, 1935 to 1951.

would say yes, definitely yes. In my opinion at least as many people as the whole total shown in the statistics, but very probably even more, are dying from syphilitic aortitis. However, the number of these is hidden in the rubric of "diseases of the heart" and "diseases of the coronary arteries". The rubric "others" surely does not include all these cases. It is well known that aneurysmata develop in only about 15% of men and women with

TABLE IV.

| Year. | Number of Cases. | Year. | Number of Cases. | Year. | Number of Cases. |
|---|---|---|---|---|---|
| 1935 | 542 | 1941 | 370 | 1947 | 393 |
| 1936 | 552 | 1942 | 400 | 1948 | 383 |
| 1937 | 548 | 1943 | 342 | 1949 | 379 |
| 1938 | 572 | 1944 | 398 | 1950 | 234 |
| 1939 | 595 | 1945 | 335 | | |
| 1940 | 498 | 1946 | 344 | | |

syphilitic aortitis. Even better known is the fact that the greater number of the patients with cardio-vascular syphilis die from their disease without formation of aneurysmata. If I take into account the foregoing statements of several authors that about 10% of all cardiac deaths are due to cardio-vascular syphilis, then the number of deaths from syphilitic aortitis would amount to at least double the total registered in the official statistics as caused by syphilis. There are no means of ascertaining exactly the number of deaths caused by simple syphilitic aortitis (with or without aortic regurgitation), as the diagnosis cannot be established *in vivo* in a big percentage of cases. However, I feel sure that I do not err too much and do not over-estimate this figure if I accept it as equal to the total sum of deaths caused by syphilis shown in the official statistics.

Summing up, I think that at the present time about 600 people die from syphilis in Australia every year. But if my calculation is right, then the number of men and women with cardio-vascular syphilis and other abnormalities caused by syphilis may amount, even at the present time in Australia, to several thousands. The general consensus of opinion is that about 10% of the people with cardio-vascular syphilis die within a year's time.

Thus the present status of syphilis in Australia is not a bad one. Of course, it could be better. It must become better and it will become better—much better. It is quite certain that the decline in primary syphilis will continue. Willcox (1953) makes the following statement: "It would seem likely that within a year or two early syphilis will be under control from the public health point of view in well-developed countries." So it may happen very soon that cases of primary syphilis will be regarded as a rarity. Syphilis appears today, much more than ever, an eradicable disease. But the big question is whether penicillin treatment will be able to prevent the development of the severe late manifestations, especially of cardio-vascular syphilis. We shall know for certain about this in ten to fifteen years' time. The optimist claims: "In another generation, cardio-vascular syphilis should be, in New England, simply a historic disease of the past as it can become in any part of the world" (Bauer, 1953). I am generally not too optimistic in my prognosis, but I hope that the same will happen in Australia.

However, we must beware of complacency in the field of syphilis in the next two decades. We must continue in eager seeking for late manifestations of syphilis in any given case, and we must not relax in syphilis control. The most vigorous control measures have to be continued without the slightest slackening. And so the attitude of the physician must be the same in the next two decades as that I mentioned in the introduction. In the attempt to clarify the ætiology of any kind of disease he has still to keep the possibility of syphilis always in mind.


### Summary.

Syphilis, never so widespread in Australia as in most other countries, has been progressively declining since the end of the second World War. The decline is most spectacular for the cases of early syphilis (primary and secondary syphilis). The decline is in some States of Australia similar to, though not so rapid as, that in the nations with very effective control measures—for example, the United Kingdom and the United States of America.



### Acknowledgements.

My thanks are due in the first place to Dr. C. Booth, Director of Social Hygiene, Sydney, who gave me ample opportunity to discuss the whole question of syphilis in Australia. I wish to express my thanks to the following pathologists: Professor J. B. Cleland (Adelaide), Dr. C. Duncan (Hobart), Dr. L. R. Finlay-Jones (Sydney), Dr. V. J. McGovern (Sydney), and Dr. A. A. Palmer (Sydney). I also wish to thank Mr. K. M. Archer (Acting Commonwealth Statistician, Canberra), Dr. C. G. B. Colquhoun (medical officer, Melbourne), Dr. Linley Henzell (Commissioner of Public Health, Perth), Dr. H. V. L. Murray (Director of Public Health, Hobart), Dr. T. O. Shea (Director-General of Health, Brisbane), Dr. H. H. White (for the Acting Director of Public Health, Port Moresby), and Dr. T. W. Kernohan (Mayo Clinic), for supplying me with the reqired data. I further wish to thank Dr. R. R. Willcox (London) and his publishers, William Heinemann, Limited, for permission to quote from his book "Progress in Venereology".


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## MODERN CHANGES IN THE ATTITUDE TOWARDS THE PAIN OF LABOUR.[1]


By G. J. HALL, M.B., B.S. (Melbourne), M.M.S.A., D.Obst., R.C.O.G. (London),

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As my remarks are mainly in relation to "natural childbirth", I wish to make it clear at the outset that my opinions are not necessarily those of the honorary staff of the King Edward Memorial Hospital.

The first point to stress is that there is a pain of normal labour. When Grantly Dick Read's famous patient refused chloroform offered by him, and afterwards uttered those famous last words, "It didn't hurt, doctor, it wasn't meant to, was it?", she started this keen mind on a life-time of study of the pain of labour. Her statement did not mean that labour was painless; it implied that the actual birth of the head over the perineum was painless, and I shall have more to say on this later.

Now let us briefly study the attitude towards the pain of labour through the ages.

In primitive races childbirth is accepted as a natural process not needing the help of medical men or drugs. There is here in Western Australia a great opportunity to study childbirth in the uncivilized Australian aboriginal. Such a study in the area recently traversed by Mr. W. Grayden in search of Leichhardt's box would be a valuable start for research as outlined in the Western Australian Queen's Gift Coronation Fund. A report in a medical journal on this subject, whether it proved to be in favour of or against natural childbirth, would put Western Australia on the map as a late entrant in the field of medical research.

From the primitive era we pass to the chloroform-hyoscine era of relief of pain. Through the medical careers of most of us until recent years public opinion has demanded that relief of pain be given, preferably by the production of complete amnesia. The doctor who has refused to give drugs has lost patients because the only interest a patient has in labour is in the amount of pain she suffers. She is not interested in the obstetric abnormalities, except in so far as they affect her pain. If her obstetrician relieves her pain, he will be good in her sight no matter how inexpert he may be at obstetrics.

Finally, we are now in a third era when public opinion has swung to the feeling that labour, be it painful or painless, is best conducted without these pain-relieving drugs. There are women today who, even if they have really severe labour pain, knowing of the slight risk of drugs, are willing to have a natural childbirth. Some of

[1] A post-graduate lecture, delivered on March 15, 1954, at Perth.

my most grateful natural childbirth patients have had labours that were complete failures as far as pain was concerned. One whose confinement was a dismal failure, ending in an hysterical second stage of labour and forceps delivery under chloroform anæsthesia, has since recommended patients to come to me for natural childbirth. Natural childbirth, then, is the fashion of today, as was the use of hyoscine fifteen years ago. If any doctor casts it out as being unworkable, he will be the loser, because natural childbirth patients are usually the most intelligent and grateful patients in one's practice.

There are many who believe that history will repeat itself and that we shall pass back to the "horrible hyoscine" era. If there does come a fourth era in the pain of childbirth, I think it will be along the lines of better and safer pain-relieving drugs.

Now for some positive statements.

I do not believe in painless childbirth, and I always tell my patients this fact. It is significant that *primigravidæ* sometimes ask about painless childbirth, but *multigravidæ* always use the term "natural childbirth".

Natural childbirth, as defined by Helen Heardman, does not exclude the use of drugs: "Natural childbirth is attained when on the physical plane labour is physiological and unobstructed, and on the mental plane the mother is unafraid; reaching the climax of the actual birth fully confident, conscious, and joyous." This does not exclude the use of pethidine and nitrous oxide or even hyoscine and chloroform in the late first stage if the patient is fully conscious at the birth. However, for those who do not believe that drugs and natural childbirth are compatible, we have coined the term "middle of the road patients", half-way between natural childbirth and the old "put the poor thing out of her misery" attitude, and this is where the future lies.

To those who seek advice on what their attitude to the pain of labour should be, I make the following suggestions.

### Ante-natal Education.

Ante-natal education relieves the fears of labour. The fear-tension-pain syndrome of Grantly Dick Read is an established fact.

### Ante-natal Practice in the Art of Relaxation.

Relaxation in the lateral and dorsal positions should be practised for variation in labour. The amount of pain varies directly with the ability to relax. Ante-natal exercises are necessary only as a means of aiding relaxation. In some of my most successful cases the patients have never found time to do exercises; they are naturally good "relaxers". There is an hereditary factor here: some patients are born "relaxers", and they will have relatively painless labours irrespective of drugs and obstetricians.

### Pain-relieving Drugs.

Pethidine is the most valuable pain-relieving drug in obstetrics, and is necessary for most *primiparæ* in the late first stage—the real pain period of labour. The change in the patient's attitude following the administration of pethidine is dramatic. If she has commenced to become distressed and lose control, she rapidly regains it, she relaxes better and dilatation of the cervix is hastened. Every obstetrician should spend sufficient time in the labour ward to observe this change for himself. Resident medical officers and obstetricians do not spend enough time in the labour ward.

Our attitude to hyoscine in recent years has changed, owing to a better understanding of the pain relationship to the various stages of labour. Grantly Dick Read has proved that cervical dilatation from three-fifths to complete is the true pain period of labour. After full dilatation the patient regains control, she sleeps between contractions, and during contractions is so pleased that she can herself now help the baby into the world that she no longer needs relief from pain. If we use hyoscine—and I still think that it plays a small part in the relief of labour pain—we lose the cooperation of the patient in the vital second stage. If hyoscine is used, then it should cover the late first stage only, and I am sure that, if she is carefully controlled by a competent midwife, the patient can be made to "come out" from the hyoscine in the second stage. This is a very great advance in our attitude to hyoscine.

Nitrous oxide and oxygen are now installed in all cubicles at the King Edward Memorial Hospital. An increasing number of patients can be delivered conscious or semi-conscious and fully cooperative with the use of nitrous oxide and oxygen. At this hospital I now rarely anæsthetize a *primipara* with chloroform for delivery of the head. I find that more *multiparæ* need anæsthesia for delivery, partly, I think, from force of habit and bad training.

"Trilene" can take the place of nitrous oxide and oxygen for the use of country practitioners.

### Delivery of the Head.

The delivery of the head over the perineum is one of the least painful and distressing parts of labour, and in patients whose relaxation is satisfactory it is painless. I stand firm on this statement. There is a natural anæsthesia of the perineum as the head slowly distends it. I have often performed an episiotomy and sutured the incision immediately without anæsthesia, and on being closely questioned the patient has been found not to have felt pain. There is also present a natural amnesia of labour which is seen in the second stage of subjects whose relaxation is satisfactory—present to such an extent in one of my patients that the labour ward sister accused her of being a drug addict. The perineal anæsthesia is greater in *primiparæ* than in *multiparæ*. Many natural childbirth patients who have been very satisfied with their first labour are disappointed with their second labour for this reason. I have learnt this from observation in the labour ward; I have never seen it previously recorded. I have never attempted to perform an episiotomy on a *multipara* without anæsthesia, and I doubt if it would be successful. Morever, natural childbirth *multiparæ* need more help from the obstetrician in the second stage, because the process is more violent and they more easily lose control. I have *multiparæ* who have been successful natural childbirth subjects for the first time; they have assured me that the only difference was that I was there to guide them through the second stage and prevent their fears that the baby would come with a terrific rush and split them wide open. Hard work and panic are two common manifestations of the second stage often mistaken for pain by the unwary obstetrician.

### The Duty of the Obstetrician to his Patient in Labour.

Research into women's emotional labour has proved that the obstetrician's duty does not begin and end with a rushed trip to hospital to deliver the head. A woman in labour needs a close confidant. Obstetricians in other parts of the world have solved this problem by charging fees of 100 guineas or more and limiting their number of cases. In this city we cannot do that, so part of the responsibility must be passed on to the physiotherapist. We now have a physiotherapist at this hospital, but she does not enter the labour ward, where she is most needed. However, even if the obstetrician can "pop in" and stay with the patient during a few contractions in the late first and early second stages, and encourage her, he will do more good at that time than by being present at a normal birth. I have "dropped in" on patients in the late first stage, when the searing low-back pain has been at its worst. I have adjusted their relaxation pillows and carried out low sacral massage during pains, and they have pleaded with me not to leave, the relief has been so great. The presence of a close confidant, together with sacral massage, will do more to relieve the pain of labour than all the drugs at our command. Modern obstetricians can still learn from the old "Gamp", who sat by the patient through labour and rubbed her back. It is an obstetrical maxim that a patient in labour should never be left alone; loneliness increases her fears and militates against relaxation. The

modern labour ward has much to answer for in this respect. The old domiciliary set-up, when the woman was in her own home environment and kindly attendants were always present, gave her a much better emotional labour than the present-day fearsome, lonely labour wards.

Remember Grantly Dick Read's three labours: (i) the labour of women—physical; (ii) the labour of women—emotional; (iii) the labour of the obstetrician. The last-mentioned is often the most distressing. Never let us forget that a "jittery" obstetrician produces a frightened patient; fear produces tension and tension produces pain, so that we can unwittingly cause our patient pain—we of all people, who are pledged to relieve her suffering.

### Noise During Labour.

Finally, let me say a word about the noise a patient makes during labour. Noise does not necessarily indicate pain. To the patient who apologizes for noise I quote the professional ax-man, who gives a loud grunt at every bite of the ax. Noise in this case indicates hard work, not pain, and the same may apply to the second stage of labour, which is the hardest physical work a woman is ever called upon to perform.

### Conclusion.

Summing up, then, I would say that a relatively painless natural childbirth is attainable by a percentage of mothers who attempt it, but not by all. I am certain that the percentage can be increased by better knowledge and understanding on the part of the obstetrician; Grantly Dick Read's percentage of successes would be much greater than yours or mine. Many women can and do attain natural childbirth without any special preparation themselves or any help from the obstetrician, so long as he will allow her to be delivered without an anæsthetic. Moreover, if he insists on her having a general anæsthetic against her wishes, as I have often heard, then he not only should not be called an obstetrician, but he is actually legally liable for administering treatment against the patient's wishes.

### Acknowledgements.

My thanks are due to the Chairman of the Honorary Staff of the King Edward Memorial Hospital for permission to publish this paper.

## Reports of Cases.

### THE TREATMENT OF DEPRESSIVE PSYCHOSIS WITH SODIUM SUCCINATE.

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and
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The cases reported in this paper are mainly those of patients who, without any history of previous mental illness, developed in middle age or later slowly progressive symptoms of depression without any pronounced cyclic or other changes (affective depression of the older age group, Robertson *et alii*, 1953). The patients were treated with intravenous injections of a 5% sodium succinate solution buffered to a pH of about 7·0. The injections were given slowly into an antecubital vein in a quantity sufficient to cause the cough and flush characteristic of the drug (Barrett, 1947; Trautner *et alii*, 1953), 10 to 50 millilitres being required, the amount depending on the patient. Twenty to 30 injections were given to each patient at daily intervals on five days each week. At the same time two to six tablets (0·5 gramme) of sodium succinate were given orally per day, after meals. The oral medication was continued after termination of the course of intravenous therapy, and as maintenance therapy after release of the patient from hospital, since it was observed that, at least in the early stages of recovery, the patients tended to relapse if the therapy was stopped. Also it was found that improvement might continue over several months with oral medication alone. No toxic effects have been observed during the slow injections, or with oral maintenance doses over periods of up to two years.

#### Case I.

Mrs. A., aged forty-five years, was admitted to hospital in July, 1952, with a diagnosis of depressive psychosis. She was a small, thin woman at the menopause. She complained of occasional attacks of asthma. Physical examination of the patient revealed no abnormality; her blood pressure was 130 millimetres of mercury, systolic, and 80 millimetres, diastolic. The first signs of mental illness had been noticed in 1944, when she was dull and depressed and apparently suffering from auditory hallucinations. She was admitted to hospital, discharged after 10 electro-convulsive treatments, readmitted a month later and discharged after seven electric treatments, and readmitted again a week later when she received six electric treatments. Soon after her discharge from hospital she again showed signs of depression, anxiety and lack of interest in her household work, and remained thus through the years, slowly developing some religious preoccupations. In October, 1952, she was given another course of electro-convulsive treatment with some improvement, but relapsed within a fortnight. Succinate treatment was commenced in October, 20 millilitres being given daily by intravenous injection and one gramme three times a day. There was little alteration in her condition until about the fifteenth injection, when she became less tense and agitated. With the twentieth injection she began spontaneously to conduct rational conversations and to take an interest in ward activities. After 25 injections she was able to sleep without sedation and her behaviour was free of psychotic preoccupation. She was discharged from hospital after 30 injections, with instructions to take four tablets of sodium succinate per day. When she was last heard from in February, 1954, she was still continuing oral medication and was fully able to cope with her housework. She takes an interest in her home and children, and takes part in social activities.

#### Case II.

Mrs. B., aged sixty-three years, had a long history of mental illness. Her first admission to hospital was in April, 1936, when she was suspicious, distrustful and reticent, with erratic and disconnected conversation. Her condition was diagnosed as non-systematized confusional insanity, and she received 12 "Cardiazol" shock treatments. After her discharge from hospital she was unable to cope with her home duties. She was readmitted to hospital in May, 1939, in a state of depression. What treatment, if any, she received at that stage is uncertain. Information from her family disclosed only that after her discharge from hospital she was rather agitated, and that throughout the intervening years she had been depressed, mildly confused, agitated, and unable to do any work. When she was examined in November, 1952, she was physically well, but sleeping poorly. Her blood pressure was 150 millimetres of mercury, systolic, and 95 millimetres, diastolic. She was extremely agitated and depressed and wept easily, was unable to concentrate or to follow any conversation, and had vague ideas of guilt and hopelessness. There was no improvement after 12 electro-convulsive treatments, and prefrontal leucotomy was considered. The intravenous administration of succinate, 20 millilitres per day, together with oral medication of one gramme three times a day, was commenced in December, 1952. After 12 injections she became less agitated, and her depression and confusion decreased. From then on her condition improved steadily. After 25 injections she no longer showed signs of agitation or depression, and her conversation had become coherent

and even witty. She occupied herself in the ward, and for the first time in years she played the piano in her spare time. She also expressed spontaneously a keen interest in her family and a desire to go home and rejoin them. She was discharged from hospital in January, 1953, with instructions to continue oral medication, one gramme three times a day. When last heard from in January, 1954, she was still well and coping with her housework, and her mental condition on her discharge from hospital has been fully maintained. She is still taking the tablets.

### Case III.

Mr. D., aged sixty-five years, was first admitted to hospital in January, 1953, an agitated old man, tearful and very depressed. His blood pressure was 190 millimetres of mercury, systolic, and 105 millimetres, diastolic, but otherwise he was in good physical condition, though sleeping poorly. It was reported that he had always worried too much, and had become increasingly depressed and hopeless since his wife had suffered a temporary illness six weeks previously. He received 10 electro-convulsive treatments and was discharged from hospital, apparently well, at the end of January, 1953. He was readmitted to hospital ten days later, very agitated and depressed, complaining that he had no energy, that his legs felt weak, that the neighbours swore at him and upset him, and that he had no wish to live any longer. After four electro-convulsive treatments he was discharged from hospital as improved and advised to continue with mild sedation. He was again admitted to hospital four weeks later, very agitated and depressed, weeping frequently, unable to sleep and refusing to eat. Succinate treatment was started, 25 millilitres being given intravenously, and tablets by mouth, one gramme three times a day. After eight injections the patient was less agitated and was beginning to eat better. After 20 injections he was able to sleep without sedation for the first time, and he was generally more cheerful and free from his worries. He was discharged after 24 injections in March, 1953, with instructions to continue oral succinate medication, one gramme three times a day. In August, 1953, he ran out of tablets and failed to renew his supply. A fortnight later he began to show agitation, irritability and the beginning of depression, and presented himself at the hospital as a voluntary boarder. He received five intravenous injections of succinate, which cleared the symptoms. He was discharged from hospital in October, 1953, with strict instructions to continue his oral medication. When last examined in February, 1954, he was feeling well, and was fully occupied at home and happy in his surroundings.

### Case IV.

Mr. E. was admitted to hospital in May, 1953, a medium-sized, wiry man of sixty-one years, with slight hypertension; the systolic blood pressure was 150 millimetres of mercury, and the diastolic pressure was 95 millimetres, the radial vessels were just palpable, but otherwise he had no signs of organic disease. There was no history of previous mental illness. The patient had worked as a bricklayer until about two years previously, when he first complained that the work was too much for him, and that he could no longer cope with it satisfactorily and for that reason was not justified in accepting his wages. He stopped working and became progressively more depressed, lachrymose, irritable, aggressive, and finally suicidal. He found difficulty in sleeping, and was reluctant to eat and restless in a confused way. On his admission to hospital he remained in bed and was disinterested and disorientated in time and place. He insisted that he would never get well again, that no therapy was worth while, and that it did not matter where he died. Succinate therapy was commenced, 30 millilitres being given intravenously daily and one gramme orally three times a day. After five injections the patient got up, but only walked about aimlessly; after nine injections he began to talk to other patients and to do ward work voluntarily; after 14 injections he was allowed a week-end with his family, but returned rather bewildered and apprehensive. A few days later he stated for the first time that he thought he might recover. He was discharged from hospital after 25 injections, generally cheerful, completely free of depression and other psychotic symptoms and able to sleep without sedation. He was given tablets, one gramme three times a day, as maintenance therapy. Six weeks after his discharge from hospital, he started on his own initiative in his previous trade, bricklaying, and when last examined in February, 1954, he was still working full time and his performance was adequate and satisfactory. Oral medication is continuing.

### Case V.

Mr. F., aged sixty-one years, was admitted to hospital in September, 1952, with a diagnosis of melancholia and a previous record of "Cardiazol" and electro-convulsive treatment. He was found to be a big, powerful man; his blood pressure was 160 millimetres of mercury, systolic, and 100 millimetres, diastolic, and his arteries were slightly thickened, but he had no other signs of organic disease. He was agitated, depressed and very distrustful, convinced that his wife had been murdered, and for that reason he refused any sort of therapy or even discussion of it. At other times he was self-accusatory and heard voices telling him to kill himself, since his condition was quite hopeless. After a course of seven electro-convulsive treatments he showed sufficient improvement to be discharged from hospital in October, 1952. He was readmitted in May, 1953, agitated, depressed, suspicious and hopeless. He showed retardation, in so far as it took him several minutes to answer the simplest question. Sometimes he would remain mute and hostile; he stated that his thoughts had been controlled and admitted vague ideas of reference. After four electro-convulsive treatments he was still confused, apprehensive and perplexed, hopeless and nihilistic. It was considered that the patient probably suffered from organic cerebral vascular deterioration, and that no benefit could be expected from further electro-convulsive treatment. In May, 1953, succinate treatment was tentatively commenced, 30 millilitres being given intravenously each day and one gramme three times a day by mouth. After 18 injections the patient was much improved and able to get out of bed and to attend occupational therapy classes; but he still retained paranoidal ideas. After 26 injections he appeared to be free of all psychotic symptoms, showing merely such irritability and argumentativeness as could be expected from his arteriosclerosis. Oral succinate therapy was stopped and he relapsed slowly during the following months.

### Case VI.

Mr. F., aged forty-eight years, was admitted to hospital in September, 1953, on a certificate stating that he was confused, aggressive, irrational, grossly disorientated, unable to maintain a conversation, lachrymose and neglectful of himself. His landlord stated that on one occasion he had had to be forcibly restrained from leaving the house without any clothes on, and that lately he had slept with a carving knife in his bed, threatening to "cut it off" (probably his leg, which was affected by an irritating skin eruption). The patient was found to be physically well; his blood pressure was 130 millimetres of mercury, systolic, and 85 millimetres, diastolic, but he was mentally confused and disorientated. He stated that he had been in Australia for five years, that he had served in the French Army for three years and that he was a Buddhist by religion. None of these statements could be confirmed; it was, however, verified that shortly before his admission to hospital he had attempted suicide by taking barbiturates. His condition was diagnosed as one of depressive psychosis, and succinate therapy was started, 25 millilitres being given intravenously daily and one gramme orally three times a day. A fortnight later the patient was quieter, but began to worry about his social and financial position and future; at other times he expressed grandiose ideas about his capabilities. After a total of 25 injections these symptoms had also disappeared and the patient was discharged from hospital after a suitable job had been found for him, taking one gramme of succinate by mouth three times a day.

### Comments.

Twenty-two patients have been treated to date with succinate given intravenously, and have been kept on oral medication long enough—for several months or more—to indicate that their improved condition is being maintained. With one exception these 22 patients had failed to respond to other methods of therapy. Sixteen of the patients improved so far that they could be discharged from hospital; they were free from detectable psychotic symptoms and able to resume their previous occupations. Six patients, though showing various degrees of improvement, could not be discharged from hospital, partly because of accompanying arteriosclerotic deterioration, and partly because their home conditions were not suitable. No patient relapsed as long as the oral medication was continued.

These results compare favourably with those reported on the treatment of depressive states with succinonitril ("Suxil") by Delay *et alii* (1949), by Severy (1952) and by other authors. However, sodium succinate does not cause the unpleasant side-effects (drowsiness, headache *et cetera*) recorded for the nitril. On the evidence available, it seems likely that succinic acid is the common physiological agent responsible for the benefits of both drugs. The procedure is more or less the same with both drugs; in both treatments initial high doses are advisable, and inadequate dosage and medication may account for the failures recorded by Gillis *et alii* (1953) with succinonitril and observed by us on attempts to reduce the quantity of succinate injected or the frequency of the injections.

The generally accepted therapy in cases of this type is electro-convulsive treatment. Its application presents difficulties if the patients have arteriosclerosis and cardiac damage, since acute circulatory collapse with prolonged invalidism and even death may occur. It was therefore essential to establish whether succinate injections were likely to put an extra strain on the functioning of an already diseased heart. Several patients who were considered unfit for electro-convulsive treatment because of myocardial damage were treated with succinate given intravenously while their heart action was being observed by means of electrocardiography. From the tracings taken before, during and after the succinate injection it was seen that the drug did not essentially alter the tracings; also, the patients were in no way distressed. On these observations we did not hesitate to use succinate in the treatment of patients with high blood pressure or other cardiovascular symptoms, and no accidents occurred.

The therapeutic effect of succinate was less dramatic than that obtained with electro-convulsive treatment, but it appeared to be more stable. After electro-convulsive treatment many patients show good recovery, but frequently they relapse within weeks or months. To date, none of the succinate-treated patients has relapsed whilst continuing the oral medication. We have in some cases reduced the maintenance dosage to two or three tablets per day, but the period of observation is still too short to decide whether the oral medication can, after a time, be discontinued.

Electro-convulsive treatment frequently causes a temporary state of confusion or excessive euphoria. This effect was never noticed with succinate, but it was occasionally seen that the first reaction of the patient, after six to 10 injections, was an increased aggressiveness, hostility or querulousness. These signs disappeared usually after five to seven more injections and gave way to a more active interest in and a more pleasant reactivity to the surroundings. At this stage sedation for agitation and insomnia usually became unnecessary. Further improvement proceeded steadily, though slowly, over several weeks or months.

We have been unable to use succinate to any significant extent in other types of depression, manic-depressive psychosis or depressive neurosis, but it would appear, from the little experience gained, that some of these conditions do not react to succinate therapy. As has previously been reported (Trautner *et alii*, 1953), the main effect of succinate appears to be an increase in awakeness and awareness. It is possible that in the cases presented a lowered interest in and a lowered awareness of the surrounding world are concomitant factors in the disease, and that the effect of succinate is merely to stimulate the patient out of his apathy or preoccupation. It is likely that these considerations determine the indication for the treatment. In this context the question will be raised whether the reaction to succinate could be used as a diagnostic or prognostic aid. We have not as yet sufficient material to propose even a tentative answer. However, since the treatment appears to be harmless, it would seem justifiable to try it in the above-mentioned conditions.

### Acknowledgements.

We wish to thank Professor R. D. Wright and Dr. A. R. Phillips for their interest and help in this investigation.

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## A CASE OF LIVER FAILURE IN THE PUERPERIUM.

By JAN J. SAAVE, M.D.,

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THE following case is worth recording because of the rarity of the condition.

### Clinical Record.

A native woman, aged approximately thirty years, was admitted on January 21, 1953, to the Maternity Section of the Rabaul Native Hospital. She had a history of increased vomiting during her present otherwise uneventful pregnancy. Her three previous pregnancies were apparently quite normal. Two children were alive and one was dead. The menstrual cycle was always regular, but the bleeding had appeared to increase in its intensity in the last two years. During the three years prior to her admission to hospital she was given two courses of "Novarsenobillon" at an aid post. One course consisted of six injections of 0·5 gramme each. This treatment was given for sores on her legs. She had had one attack of jaundice some years earlier and several attacks of malaria recently. Otherwise she was in good health.

On examination of the patient on February 28, 1953, there was no detectable jaundice. The mucous membranes were pale. Examination of both lungs revealed no abnormalities. Her temperature was 98·2° F., her pulse rate was 90 per minute, her blood pressure was 85 millimetres of mercury, systolic, and 55 millimetres, diastolic, and her respiration rate was 38 per minute. At 7 a.m. she was delivered of a still-born male infant weighing six pounds 14·5 ounces. The blood loss was normal. "Pituitrin", 10 units, and ergometrine, 0·5 milligramme, were given hypodermically. The placenta was complete. The patient vomited dark brown fluid several times, but her general condition at 9 a.m. appeared to be fair. However, the abdomen was distended and slightly tender on palpation. The liver and spleen were not palpable. There was a distinct tympanitic note on percussion. The uterus was firm and was felt just below the umbilicus. There was noticeable oozing of blood from the skin lesions on both legs, which resembled yaws lesions. The lochia were not offensive.

A blood examination gave the following information: the hæmoglobin value was 60%, the erythrocytes numbered 2,840,000 per cubic millimetre, and the leucocytes 45,000 per cubic millimetre, 90% being neutrophile cells (with a considerable "shift to the left"), 1% eosinophile cells and 9% lymphocytes.

The condition of the patient was steadily deteriorating. The tentative diagnosis of fulminating septicæmia in the puerperium was made, and treatment was instituted with crystalline penicillin, streptomycin, calcium gluconate, "Synkamine", and quinine as a malaria suppressive.

The patient died at 11.45 a.m. on the day on which she was confined.

### Autopsy Findings.

The necropsy revealed œdematous brain with flattened gyri and engorged blood vessels. On section, numerous hæmorrhagic patches were found in the brain substance.

Examination of the chest revealed multiple subpleural hæmorrhages of varying sizes and soft pleural adhesions of the left lung. Examination of sections revealed terminal œdema. The heart appeared dilated. The heart muscle was of a pale yellow colour. In the lower third of the œsophagus enlarged and engorged veins were present; some of them appeared to be eroded. The mucous membranes were very congested.

There were 350 cubic centimetres of cloudy serous fluid in the peritoneal cavity. The liver was greatly reduced in size and weighed 950 grammes. The organ was of a firm consistency and distinct orange-greenish colour. The surface was wrinkled and nodular. Examination of sections revealed multiple apparently post-necrotic scarring. The network of dense, communicating fibrous bands, which replaced the liver parenchyma, was seen throughout the entire organ. The nodules were of varying sizes and were uniformly scattered.

The gall-bladder was greatly distended, and the bile ducts contained a great deal of mucus. The spleen was soft and slightly enlarged. The kidneys were also enlarged. Examination of sections showed distinct hæmorrhagic patches and yellow-coloured zones in the cortex.

The stomach was considerably distended and contained some undigested food mixed with blood. The small gut was distended. There were no gross lesions of the mucous or serous coats. However, the peritoneal sheen was entirely lost. The subserous blood vessels were obviously injected.

Dissection of the large gut showed thickened and inflamed mucous membranes. The coats of the transverse colon were six millimetres (a quarter of an inch) thick. Its mucous membranes were changed to a jelly-like mass. There were no signs of ulceration.

Dissection of the uterus, Fallopian tubes and ovaries revealed no gross pathological lesions.

Histological examination of the liver revealed fairly extensive destruction of liver cells with granular degeneration, dissolution and fatty infiltration. Fibroblastic reaction was pronounced in the portal tracts and in areas where necrosis of the parenchyma had occurred. Numerous phagocytic cells were observed in the stroma. The bile ducts were not necrosed, and in some areas they were actually proliferating. There was no apparent damage to the walls of vessels. A nodule of regenerating liver cells was seen. It is considered that the findings were consistent with subacute liver necrosis.

Examination of sections of the intestine revealed some desquamation of the mucosa and infiltration of the submucosa and muscle layers with round cells of inflammatory type, chiefly lymphocytes and plasma cells.

### Comment.

The post-mortem diagnosis was: (*a*) gastro-intestinal hæmorrhage, (*b*) toxic cirrhosis of the liver, (*c*) toxæmia of pregnancy.

The pathogenesis of the condition in the case described is interesting. The following conditioning factors have to be considered: (*a*) arsenotherapy (Dible *et alii*, 1943); (*b*) infectious hepatitis (Lucké, 1944; Bergstrand, 1930); (*c*) deficient native diet; (*d*) toxæmia of pregnancy (Sheehan, 1940; Way, 1947). The pathological findings indicate that the liver injury had occurred some time prior to conditioning factors (*a*), (*b*) and (*c*), and during the last pregnancy—factor (*d*). Early fibrotic and recent necrotic changes were evident in the substance of the organ.

The importance of the nutritional factor and its association with the impaired function of the liver is stressed by Himsworth and Glynn (1944) and by Wahi (1949). It is also pointed out that the inadequate diet, especially the prolonged low-protein intake, and the toxæmia of pregnancy may increase the susceptibility of the liver to vascular injury (Lock *et alii*, 1953).

The clinical record shows that the course of the disease was rapidly progressive.

The vomiting during pregnancy, the absence of the jaundice and the shock in the terminal phase of the illness were the most characteristic clinical features observed.

### Acknowledgements.

I wish to thank Dr. J. T. Gunther, Director of the Department of Public Health, Territory of Papua and New Guinea, for his permission to publish this record, and Dr. B. R. V. Forbes, School of Public Health and Tropical Medicine, University of Sydney, for his histological report.

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## Reviews.

**The Physiopathology of Cancer: A Treatise for Investigators, Physicians and Students.** Edited by Freddy Homburger, M.D., and William H. Fishman, Ph.D., with a foreword by C. C. Little; 1953. New York: Paul B. Hoeber, Incorporated, Medical Book Department of Harper and Brothers. 10" × 7¼", pp. 1050, with 152 illustrations. Price: $18.00.

THE yearly reports of institutes and organizations devoted to cancer research make stimulating reading and give an insight into not only what has been done but also the investigations in progress or merely contemplated. Readers of such reports have often wished that a comprehensive work might be published presenting a survey over the whole field and giving a balanced integration of the results. Such a work is now available, and in "The Physiopathology of Cancer", edited by Freddy Homburger and William H. Fishman, of Tufts College Medical School, we have a scholarly assembling and wise condensation of the enormous mass of research publications dealing with the problem of cancer from many different approaches. Of the 28 contributors who are responsible for 32 chapters all are Americans except Alexander Haddow, of the Chester Beatty Research Institute,

who has written two articles dealing with the clinical and genetic mechanisms of carcinogenesis, and these are amongst the best in the book. The work is divided into four parts, Biology, Chemistry and Physics, Clinical Investigation, and finally Practical Applications. Some overlapping has been unavoidable, but it is never conflicting, rather is it complementary and supplementary; thus the chapter on environmental cancer by Wilhelm C. Hueper covers part of the ground traversed by Alexander Haddow, but the reader will be glad to have this succinct presentation in addition to Haddow's very learned analysis. A special word of commendation must be paid to the clear, unambiguous and easily understood language of the many authors. As an admirable example of true scientific temper the article on the virus theory of cancer by Francisco Duran-Reynals may be cited, for the arguments are put forward without dogmatism and without distortion. Many other illustrative instances could be adduced; thus a long and carefully edited exposition of the action of nutrition on cancer ends with the summing up: "The diet must be looked upon in general as a modifier of the cancer process, not as an initiator." This work may safely be proclaimed as indispensable for the cancer student and investigator. The illustrations, mostly reproductions of photomicrographs, are excellent.

**Practical Electrocardiography.** By Henry J. L. Marriott, M.D.; 1954. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9" × 6", pp. 182, with 115 illustrations. Price: 53s. 9d.

INSTRUMENTS to record changes in activity of various organs of the body are well-established aids in the diagnosis of disease. They may be used either to make a permanent record of events which can be appreciated by the observer's unaided senses or to record changes which cannot be so appreciated. In the latter, interpretation of the findings must be made empirically from clinical and pathological correlations. Theoretical considerations may indicate such correlations, but no firm diagnosis of a disease should be made in the absence of proven correlation. This empirical approach is taken by the author of "Practical Electrocardiography", who emphasizes that interpretation of electrocardiograms must be made only on the basis of clinical and pathological correlations, and with the full knowledge of the patient's clinical state. For example, in myocardial infarction, where the electrocardiogram may fail to confirm the diagnosis in some 10% to 20% of cases, clinical judgement must prevail.

Most of the book is devoted to elucidation of abnormalities of rhythm and conduction, and only the salient features of myocardial damage are described. Useful notes are also given of the effects of the drugs digitalis and quinidine, and the effect of blood electrolyte changes on the electrocardiogram. A pleasing feature is the clear-cut statements of the criteria necessary for the diagnosis of each condition studied. Discussion of the theory of electrocardiography is minimal, but the standard precordial $C$ and $aV$ leads are adequately considered.

The illustrations are excellent and two indices are incorporated, one of subjects and one of illustrations.

This book was primarily written for senior medical students and is to be highly recommended both to them and to general physicians who want a concise primer of electrocardiography.

**Mother and Baby Care in Pictures.** By Louise Zabriskie, R.N.; Fourth Edition; 1953. Philadelphia: J. B. Lippincott Company. Sydney: Angus and Robertson, Limited. 9¼" × 6¼", pp. 256, with 255 illustrations. Price: 32s. 3d.

THIS is an attractively produced book for expectant parents. The subject matter is simply expressed and its emphasis is on positive health. It covers the psychological and physical care of the mother during pregnancy and the puerperium and the management of the baby. The section on preparation for childbirth and motherhood is on Grantly Dick Read lines, with stress on the family unit and the need for parent classes and paternal cooperation, and is well done. Baby care is rather energetic, particularly with the swab-stick, and the bath method, though quite satisfactory, is not that used by most Australian mothers. The layette and nursery furniture are also too American for general use here. The illustrations are good and include the mechanism of labour. However, a few would have been better omitted—for example, Rh incompatibility, which is rather frightening, and the two extraordinary photographs that appear to indicate that the American woman requires two men, one on each arm, even when she is pregnant, to take her for a walk and to help her to enjoy fresh air. The information is on the whole accurate, though there is an occasional strange statement such as "Human milk alone can produce the proper growth of brain tissue".

The book will have a place in reference libraries used by parents, but it cannot be recommended as a book on baby care for the individual parent.

**Textbook of Obstetrics.** By John F. Cunningham, M.D., M.A.O., F.R.C.P.I., F.R.C.O.G.; Second Edition; 1954. London: William Heinemann (Medical Books), Limited. 9" × 6", pp. 600, with 297 illustrations, three in colour. Price: 40s.

THIS book brings up to date the original publication which appeared only two years ago. From notes used in lectures during his mastership of the National Maternity Hospital, Dublin, the author has produced a first-class treatise to meet the needs of the student and the practitioner in obstetrics. In addition to a comprehensive coverage of the field of obstetrics proper, an account is given of the ethical demands of the Roman Catholic Church, while chapters on the infant, prematurity and pathological conditions of the newborn ensure that those for whom the book is intended will have complete guidance in their daily work. The paper is of good quality and the script unusually clear. The arrangement of subjects and the author's principles are practical and commendable, and are in accordance with generally accepted methods in obstetric practice.

In a review of the first edition of the work this journal called attention to certain fallacies and omissions. These have now been rectified, with the exception that there is still no mention of the Lovsett technique in breech extraction. One must therefore conclude that the author sees no advantage in this well-known manœuvre.

**A CIBA Foundation Symposium: The Chemical Structure of Proteins.** Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Margaret P. Cameron, M.A., A.B.L.S.; 1953. London: J. and A. Churchill, Limited. 8" × 5¼", pp. 234, with 49 illustrations. Price: 25s.

THE seventh of the general symposia of the Ciba Foundation deals with the chemical structure of the proteins. Thirty-five biochemists and organic chemists from Europe and America, all working in the field of protein chemistry, met to discuss the most recent work on the structure of the proteins. The symposium opened with a series of papers, followed by discussion, on the criteria of purity which should be satisfied before a protein or a peptide can reasonably be submitted to degradation to determine its structure. Various methods used in the attempts to attain purity are described and also methods for determining purity. Chromatographic methods were much used for both these requirements and the methods available are described in some detail. Methods for the determination of end groups of proteins and peptides are described and the results obtained with certain proteins. Most of the substances examined were peptides or the simpler proteins such as insulin and the protamines. The papers are all highly technical and are of a very high standard. The monograph is suitable only for biochemists and organic chemists interested in this particular field.

**Acute Anuria: A Study Based on Renal Function Tests and Aspiration Biopsy of the Kidney.** By Claus Brun; 1954. Copenhagen: Ejnar Munksgaard. 9¼" × 6¼", pp. 215, with 62 illustrations. Price: 30 Danish kroner.

THIS readable monograph is set out in two major parts. The first consists of six chapters (60 pages) which deal with definitions, problems, historical review, morbid anatomy, pathogenesis, mechanisms and the functional pattern of the kidney. The second part, also of six chapters (66 pages), deals with the clinical material, results of simple and differential renal function tests, comments on hypertension, anæmia *et cetera*, morbid anatomy, and treatment. Techniques for the study of renal function, methods of analysis and the technique of renal biopsy are described in appendices. The case reports occupy 53 pages and there are 172 references.

The monograph is based on the study of thirty-two patients with acute anuria, and especial attention is given to ischæmic lesions, which the author considers to be the chief precipitating factors in his cases. Attempts were made to relate renal function to the histological appearances of material obtained by needle biopsy, but the correlation was not close and histological changes could not be predicted from the clinical state or from the stage of the illness.

The author's views on acute renal failure are orthodox, but his section on the histological changes considerably clarifies their nature, especially in their differentiation from post-mortem changes.

The discussion of treatment is brief and refers to most of the available methods. Dr. Brun favours conservative treatment, but makes the point that this form of treatment is not always adequate and then active measures must be introduced. He found that the Bull-Jockes-Lowe diet frequently induced vomiting and had to be discontinued. Many would not agree with his use of hypertonic magnesium and sulphate instillations into the small intestine as a means of intestinal dialysis, especially when he records threefold increases in serum magnesium levels.

The section on the technique of renal function study is clear and concise, but unaccountably lacks any description of the technique and dosages used for the determination of renal plasma flow by the subcutaneous injection of para-amino hippurate.

The monograph is well set out and clearly presented, and is recommended as a readable, accurate and modern account of acute anuria, a term which the author rightly prefers to the pathologically inaccurate "lower nephron nephrosis".

**The Management of Pain: With Special Emphasis on the Use of Analgesic Block in Diagnosis, Prognosis and Therapy.** By John J. Bonica, M.D.; 1953. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 10" × 7¼", pp. 1534, with 785 illustrations. Price: £10 15s.

THIS book is a massive and encyclopædic work. One can sympathize with Bonica's conviction, that efforts in any such field cannot achieve maximum success unless they are based upon an understanding which is as thorough and comprehensive as possible. The book therefore deals with a wide range of subjects—the anatomy of the nervous system, the "physiologic" and "psychologic" aspects of pain, the cause and the pathology of diseases which cause pain, and the treatment of pain, including the pharmacology of drugs used for it. Under treatment is included a description of the medical, surgical and therapeutic methods suited to the particular disease; but the author is most interested in, and writes chiefly about, "analgesic block as an aid in diagnosis, prognosis and therapy". The sections on analgesic block are well illustrated with diagrams of the relevant anatomy, including sections and skiagrams. A useful part of his practice, which will be new to many performing these blocks, is the radiological control of the insertion of the needles, especially useful in cranial and paravertebral blocks.

In a way, the title does not do justice to the book. The procedures described are indeed useful in the management of pain. But very often their usefulness extends beyond symptomatic relief, and they are helpful, sometimes most important, in hastening the resolution of the disease, as for example in acute thrombophlebitis, whether this follows operation or childbirth, and in the causalgias and other "reflex sympathetic dystrophies".

The matter in this book, even apart from the author's preface, reveals a single-hearted and intense devotion aroused by a deep sympathy with the desperately afflicted, and an intense scientific interest aroused by the inexplicably lasting relief which sometimes follows a temporary nerve-blocking.

There is probably no medical practitioner who would fail to find something interesting and useful in this book, from the specialist faced with the solution of some obscure problem of pain to the general practitioner faced with the heavy burden of the painful death, of which the cause is only too evident—for example, in malignant disease in which surgery and radiotherapy have failed.

Probably the lapse of time will enable the British reader to accustom himself to the fact that Bonica is a "dolorologist", and that "dolorology" is a sub-specialty of specialist "anesthesiology", and that departments of "dolorology" have been established, and to these are attached not only "anesthesiologists" and "dolorologists", but also "physiatrists". The results achieved amply compensate for the neologisms.

**Modern Medical Monographs: Acute Pulmonary Edema.** By Mark D. Altschule, M.D.; 1954. New York: Grune and Stratton. 9" × 5¾", pp. 78. Price: $3.50.

THIS treatise provides a brief, readable approach to the subject. The sections on physiology are supported by references particularly to the literature dealing with investigations in animals. Emphasis is laid on the difficulties of physiological investigation in patients, in one of the "most treacherous and difficult fields in all circulatory physiology". The causes (theoretical or observed) of increased pulmonary interstitial fluid are discussed and it is assumed that some or all are operative in man. These, in summary, are (*a*) increased transudation, (*b*) decreased reabsorption, and (c) increased total extracellular fluid. Causes of increased transudation are elevated capillary pressure, increased filtering area, large blood flow, low plasma protein content, capillary damage with increased permeability, and bronchospasm. Reabsorption is largely a function of lymphatics and impairment is due mainly to raised venous pressure.

The clinical chapters are didactic and unsupported by references. Many ideas are new and some old and cherished ideas are discarded summarily. Thus the concept that failure of the right ventricle relieves the symptoms of left ventricular failure is dismissed as of only superficial plausibility. In treatment the value of morphine and synthetic substitutes is stressed, the advantages and dangers of oxygen and aminophylline are indicated, and it is noted that anti-foaming agents and sympathetic blocking agents may be of value.

The book will be of value rather for the student and the general physician as a guide to trends of modern thought. It should be read critically.

## Books Received.

[*The mention of a book in this column does not imply that no review will appear in a subsequent issue.*]

"The Law and Procedure at Meetings in Australia and New Zealand: A Concise Guide to Assist Persons Taking Part in or Who May be Called upon to Advise in Connexion with Meetings", by Percy Ernest Joske, Q.C., M.A., LL.M.; Third Edition; 1954. Sydney, Melbourne, Brisbane: The Law Book Company of Australasia, Proprietary, Limited. 7¼" × 5", pp. 208. Price: 17s. 6d.

The other two editions of this work were much appreciated.

"Australia in the War of 1939-1945: Series 3, Air: Volume 3." "Air War Against Germany and Italy, 1939-1943", by John Herington; 1954. Canberra: Australian War Memorial. Obtainable at all booksellers. 9¼" × 6¼", pp. 748, with 89 illustrations. Price: 25s.

Describes the part played by Australians in the first four years of the air war in Europe and the Middle East.

"Fundamentals of Otolaryngology: A Textbook of Ear, Nose and Throat Diseases"; Second Edition; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. 9¼" × 6¼", pp. 506, with 197 illustrations. Price: £3 6s. 6d.

Planned as a book which will offer basic instruction to the student.

"A Manual of Tropical Medicine", by Thomas T. Mackie, M.D., Colonel, M.C., A.U.S. (Retired); George W. Hunter, III, Ph.D., Colonel, M.S.C., U.S.A., and C. Brooke Worth, M.D.; Second Edition; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. 9¼" × 6¼", pp. 930, with 304 illustrations, seven in colour. Price: £5 14s.

Written with realization that tropical diseases are not confined to the tropics; there are 24 contributors.

"Hope and Help in Parkinson's Disease", by John C. Button, junior; 1953. New York: Vantage Press, Incorporated. 8¼" × 5¼", pp. 108. Price: $4.95.

A book for the patient.

"Textbook of Medicine", by various authors, edited by John Conybeare, K.B.E., M.C., D.M. (Oxon.), F.R.C.P., and W. N. Mann, M.D. (London), F.R.C.P.; Eleventh Edition; 1954. Edinburgh and London: E. and S. Livingstone, Limited. 9¼" × 7", pp. 922, with 40 illustrations. Price: 37s. 6d.

The first edition was published twenty-five years ago. There are 18 contributors, all of whom are British.

"The Digestive Tract in Roentgenology", by Jacob Buckstein, M.D.; Second Edition; 1953. Philadelphia: J. B. Lippincott Company. Sydney: Angus and Robertson, Limited. Volume II: "The Small Intestine, The Large Intestine, Herniation and Eventration of the Diaphragm, The Gallbladder and the Bile Ducts, Spleen, Liver and Pancreas." 10" × 7¼", pp. 664, with 471 illustrations. Price: (two volumes): £13 8s. 9d.

Volume I has not come to hand, and for this reason the general purposes of the work cannot be stated. This volume consists of 34 chapters and the dust cover informs us that the author has drawn on thirty-three years of practical hospital experience.

The Medical Journal of Australia

SATURDAY, AUGUST 21, 1954.

*All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.*

*References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.*

*Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.*

## METHODS OF MEDICAL EDUCATION.

METHODS of education in medicine have been debated for centuries and they will continue to be debated; for it seems unlikely that any ideal or any universally acceptable method will be evolved. It is unfortunate that medical teaching is so seldom discussed in the Press by anyone but a teacher. Few teachers are trained to teach. Most have acquired their art through experience in teaching and the dimly remembered experience of being taught. Few of them are qualified to speak with authority on systems of medical education. The student cannot speak with authority; he can speak only with the lowly voice of one who is compelled to endure many hours of boredom in the presence of his masters. But it would do his teachers no harm to hear him. Let it not be thought that all lectures and demonstrations are boring. Many of them are bright and lively and touched with the humour that helps the student to absorb his teacher's message. The teachers responsible for such sessions have been trained either by themselves or by people competent to train them. Usually they have trained themselves; for it is not considered necessary to train anyone to be a teacher of medicine. It is refreshing to read the views of one who tries to look at the problem from the angle of the student as well as the teacher. R. D. Lawrence has written a monograph entitled "Clinical Medicine, Some Principles of Thinking, Learning and Teaching".[1]

First, in discussing the scope and difficulties of the problem, Lawrence remarks that: "Man did not make the human body nor doctors invent disease, yet we are often expected to know all about both." The vast factual range of knowledge in useful relation to medicine grows continually. Its scope is beyond the qualities of the most gifted. Every discovery "in the allied fields of biology, physics and chemistry, immediately modifies and often shakes what absolute values we have". In our knowledge of function, in our conception of disease, and in our therapeutic agents and procedure, change is persistent and inevitable. "And so it should be remembered in learning and still more in teaching medicine that our theories and, perhaps more important, our treatments will completely change in over forty years of practice after qualification." The efficient doctor must have an elastic and adaptable mind. Another difficulty in the practice of medicine is the necessity for speed of practical decision—whether this is one of immediate therapeutic activity or one of relative inactivity and further observation. "This requires a trained ability to marshal quickly all our knowledge on to the very varied problems which we meet so frequently every day. This can best be done by acquiring early and following invariably a logical and systematized method of thought."

A consideration of the scope and difficulties of the problem is followed naturally by an analysis of thinking processes. Lawrence's common-sense views on thinking are worth reading. Space forbids an extensive discussion of them here. He mentions the processes of induction and deduction and the formulation of explanatory laws of relationship. When by induction "a general law has been securely established, it can safely be used by *deduction* to solve a particular problem within its sphere". After dealing with these generalities he goes on to mention the two main mental faculties: memory and thinking. Some people have one of these highly developed—perhaps at the expense of the other. Some with extremely good memories have poor intelligence—"perhaps because they have so good a memory that they can depend on this alone". Such people may be able to pass written examinations easily, but be quite incapable of applying their knowledge to the solution of some clinical puzzle. On the other hand, the man with high intellectual qualities, the man who probes and balances and whose mind "grinds exceeding small", may have an "atrociously bad" memory. This statement of Lawrence's appears to be overdrawn somewhat. The absent-minded professor has been the subject of many a classical joke. But surely his memory is "atrociously bad" for only those things that may be regarded as of lesser importance and have no place in a mind engaged in serious thought. If his memory was so bad one doubts whether he could ever have acquired sufficient knowledge to be able to set about the solution of any complicated problem, however great his intellectual qualities. Lawrence does not leave his discussion of thinking processes without mentioning the emotions and instincts and their importance in the life of a medical practitioner. "Most human minds", he writes, "are such that they need an explanation, a belief, to satisfy and to give a reason for their existence." He adds "doubt and agnosticism are unbearable to most, the unknown abhorrent". So patients require an explanation of their illness. If they have no ready explanation they may invent one. "It is kind and wise to let them hold a belief, whether true or false." One may doubt the wisdom of this latter statement. Surely it can seldom be right to confirm a patient in a false belief, although it may be better for

[1] "Clinical Medicine: Some Principles of Thinking, Learning and Teaching", by R. D. Lawrence, M.A., M.D. (Aberdeen), F.R.C.P.; 1954. London: H. K. Lewis and Company. 9" × 6", pp. 72. Price: 7s. 6d.

him to have a false belief than none at all. It is the doctor's job to give him the truth.

Lawrence's next chapter deals with diagnosis: the collection of data and the analysis "or synthesis" thereof, leading by inference to a conclusion. He says that he had hoped to be helped in this subject by the methods of criminal detection, which presents somewhat similar problems; but he had discovered that Scotland Yard had no systematized method of approach. So instead of enlisting the aid of the Criminal Investigation Branch, he describes and analyses the procedure of a skilled diagnostician and then goes on to give first a simple and then an obscure example.

What, then, of the student of clinical medicine and surgery? How and what must he learn? Lawrence stresses the importance of a course in introductory medicine, which should have as its object training in "(1) the collection of accurate data and (2) their interpretation and synthesis into syndromes". The technique of taking a good history and of obtaining clinical information by careful and systematic examination is comparatively easy to teach. But to teach how to interpret the findings is a very difficult matter. Demonstration of simple cases is probably the best way to start the student on his way to the understanding of disease in living people. In order to bolster what he is pleased to call his "imperfect memory", Lawrence evolved a system of thought designed to marshal all his knowledge and experience against the problem of the moment. He asks himself: "Where, what and why?" "Where" and "what" are concerned with the affected bodily system and the nature of the disease; "why" is concerned with the ætiology. He regards the standard ætiological arrangement of diseases as haphazard and illogical and difficult to remember. He therefore arranges ætiological factors in a sequence of the early subjects of medicine, physics, chemistry and biology, "which when expanded cover all causal factors of human disease in an orderly manner". Study of his table under the headings of "Physical", "Chemical" and "Biological" suggests that this statement may be true. His second classification is entitled "Systems and Syndromes (Where and What)". This has seven simple subheadings. Both tables could be readily memorized. Lawrence states that they have been of great assistance to him. He believes that some such system of thought should be taught to students early in their clinical studies. He goes on to mention a few causes of diagnostic errors: fatigue, lack of time, poor powers of observation, failure to take a proper history, inadequate knowledge, poor thinking, and the domination of first impressions. The last-mentioned is a fault, not of the young, but of the more mature. The "snap diagnosis" may often be right; the experienced clinician can frequently take a short cut; but occasionally or frequently, according to his ability, he will be wrong; in taking the short cut he will get into a byway instead of onto the highway. Furthermore, in a teacher, such "snap diagnosis" is not good. "It fills the students with admiration and the senior with appropriate satisfaction. But the student's mind cannot take such leaps and he must remain confused unless the intermediate steps are demonstrated by the slower process of full examination and logical conclusion."

Learning and teaching, Lawrence writes, are intimately related towards the same object. "It is perhaps the old problem of the cart and the horse with a driver added. The cart is overloaded with medical facts in the curriculum, the student has to pull this to useful competence and the teacher only to guide with the reins." This we believe to be the most important of a teacher's functions; he guides the student on the highway to knowledge and judgement; he does not teach him medicine; he teaches him how to learn medicine. For, as Lawrence points out, the student must learn by hard work. He must learn technical procedures and how to handle his patients; he must learn facts and theories by reading; he must learn to develop independent judgement. He should not merely take a text-book and read until he is exhausted. "It is sound advice not to swallow text-books in large academic doses. . . . Read round your cases and your expanding experiences. . . . When you have puzzled over the findings in your case, when you have been questioned and taught about it, then read the text-book description in details of pathology, symptoms, signs, differential diagnosis and everything you can—and ponder them."

School teachers are trained to teach. Teachers in medicine and most university teachers receive no training at all in this part of their work. Clinical tutors learn from the example of the men who taught them—some good, some bad. Teaching ability is seldom taken into account in the selection of candidates for posts in teaching hospitals. With the object of improving teachers, Lawrence suggests conferences at which young aspirants should present short papers which would be subject to constructive criticism by such seniors as may be selected for the purpose. At the same meetings the various ancillary aids to teaching could be demonstrated.

Lawrence deals very briefly with post-graduate education, as this is not the main theme of his book. However, he does mention something of special interest to Australians. "But isolated areas are poorly served. I was very struck by the activities of the B.M.A. in Australia in arranging two-day suitable courses by experts going from the big medical centres to small towns hundreds of miles away. Thus the advances of medicine are brought to the periphery." He then goes on to head a chapter on "Art and Science" with the words:

> Take love and pity to the house,
> But take your wits as well.

These words about sum up his views expressed in this chapter. Medicine is a science; but it cannot be practised at its best without art. And art implies humanity.

Lawrence concludes his book with suggestions for the improvement of undergraduate training. He deplores the demands of the department of anatomy. "The details required for examination purposes have no educative value and are an exhaustive effort of pure memory. They may have some virtue as a test of real determined concentration and powers of application, but more useful tests than these can weed out the lazy student." He writes: "When I remember how I was plunged first into the details of osteology, the bare bones without their clothing, and learned to distinguish uselessly between right and left pisiform, or was it unciform, I feel ashamed of those who put us to such tasks and the docility with which we

accepted them." "The details of the gracilis, semitendinosus, and semimembranosus, can never be of any use, even to an orthopædic surgeon, although I admit the names have a certain poetic value!"

These excerpts show his belief that much of the teaching of anatomy is redundant. He also believes that anatomy should be made to live by the introduction of clinical teachers. He admits the difficulty of determining what anatomy should be taught and what should not be taught. And "who is to judge the essentials and write the new text-books?" Not the present teachers of anatomy; not specialized surgeons and perhaps better not general surgeons. "Best of all would be a body of clinical teachers leavened by competent G.P.'s of 10-20 years' standing who could best appreciate what knowledge of anatomy is essential, helpful or useless in their practice." We regard this as unpractical. It is probable that such people would not know enough anatomy to be able to judge what was required and what was not. While it may be justifiably stated that anatomy is overdone in most medical schools, it would be unwise to run the risk of reducing the subject to the level of the class in first-aid. The people qualified to devise the course in anatomy are the anatomists—provided they are graduates in medicine. Lawrence would have anatomy and physiology taught together. Function should be described at the same time as structure. Before undertaking dissection of the cadaver, the students should be shown how muscles and bones function in the living body. He believes that too much time is spent in the laboratory in experiments on animal preparations. Many of these hours could be more usefully employed by the students in experiments on themselves and on each other. There is a leaning towards this tutorial method in many universities, including at least one in Australia. Lawrence also recommends the use of clinical illustrations as an aid to the teaching of anatomy and physiology. With this we agree, with the provision that the clinical illustrations must be true. If they are not true they might lead to complications and difficulties in the student's clinical years. The best people to use clinical illustrations are clinicians. But clinicians in the tutorial fields of anatomy and physiology are pathetically few. Lawrence would introduce the student to clinical medicine early in the course. He would dispense with systematic lectures and replace them with clinical lectures. But he points out again that the student has to learn for himself at the bedside and in the library. He points to the "great gulf between hospital conditions and the experience it gives of major organic illnesses and the more frequent minor maladies of general practice: there is practically no bridge between the two". In this regard he draws attention to the practice of the Alfred Hospital as described in the reported speech of Dr. Ewen Downie elsewhere in this issue.

Lawrence's book contains much that is good, some that is not good, much that is provocative and much that is entertaining. It is a genuine attempt to devise means for the improvement of medical education. It contains a good deal of material that is not new. But it is the work of a man who is capable of independent thought, and as such it merits study. Incidentally the dedication is to "Banting and Best Who Made This Writing Possible".

# Current Comment.

## GAMMA GLOBULIN IN THE PROPHYLAXIS OF PARALYTIC POLIOMYELITIS.

DURING the past few years, γ globulin has been used on quite a large scale in the United States as a prophylactic measure against paralytic poliomyelitis, but considerable difficulty has been experienced in evaluating its effect. A large-scale attempt at evaluation was made during the summer of 1953 in a national programme sponsored by the Communicable Disease Centre of the United States Public Health Service. The programme was planned and executed in accordance with recommendations of a National Advisory Committee, and health departments in 41 States and four cities actively collaborated in this study. The National Advisory Committee has prepared a report of the study, and a summary of the report has recently been published.[1] Particular attention was paid to the administration of γ globulin to an entire age segment in an epidemic area (that is, its mass use) and its use in household associates of poliomyelitis patients (that is, its contact use). Commenting on the mass use of γ globulin carried out on a large scale in 1953 as a method to prevent paralysis in a poliomyelitis infection, the report makes it clear that this was done as a public health measure in response to a widespread demand, and not on an experimental basis. As a result, the drawing of conclusions regarding its efficacy was not easy and in many cases impossible. In any event, the method of analysis of carefully compiled and extensive data on the use of γ globulin in those epidemic areas and populations where it might have been expected to be effective did not yield statistically measurable results, and its value in community prophylaxis as practised during 1953 is not regarded as having been demonstrated. Nevertheless, the committee considers that it cannot say that the use of γ globulin for this purpose produced no effect. A serious difficulty encountered in arriving at conclusions about the results of mass use of γ globulin in 1953 was the lack of controls. It is stated in the report that had such controls been available, the results would probably have been more clear-cut and their evaluation easier. It seems obvious in this regard that further adequately controlled studies will be necessary.

On the other hand, the data on the efficacy of γ globulin in contact use that have been accumulated in 1953 are considered to be adequate for the drawing of reliable conclusions. According to the report, these data indicate that with the preparations involved and in the dosages used, the administration of γ globulin to familial associates of patients with poliomyelitis has had no significant influence on, first, the severity of paralysis developing in subsequent cases, second, the proportion of non-paralytic poliomyelitis occurring in subsequent cases in which γ globulin was given before the onset, and third, the classical pattern of familial aggregation of cases in the country at large. In view of these conclusions, the National Advisory Committee has recommended that careful consideration be given to the present procedures and methods of national γ globulin distribution and utilization in the United States.

In the light of this report, it is interesting to recall the comments on the use of γ globulin made recently by F. M. Burnet[2] in one of the series of "Special Articles for the Clinician" published in this journal. Referring to the large-scale experiments carried out and reported by Hammond *et alii* in 1952 and the doubts raised as to the validity of the findings, Burnet states that his impression is that they can be accepted as establishing a significant protective effect from administration of a large dose of γ globulin for a short period of time. After referring to the economic impossibility and other difficulties involved in the use of γ globulin as a routine public health measure, he turns to the question of the best use of the limited

[1] *J.A.M.A.*, March 27, 1954.
[2] M. J. AUSTRALIA, July 31, 1954.

supplies of γ globulin available. He states that the commonest view is that it should be reserved for family contacts and for other close contacts, as in nursery schools of paralytic subjects, but comments that there is as yet no factual evidence as to its effectiveness in such circumstances. On the question of its administration to adults whom it is regarded as specially necessary to protect, his view is that now that methods for estimating poliomyelitis antibody are available, γ globulin should not be given without a preliminary examination of the subject's natural antibody levels. In most cases, he adds, this will show that the γ globulin is unnecessary. In any case, γ globulin, with its uncertain claims, may fairly soon be superseded by some more effective prophylactic measure, although we may, in Burnet's view, have to wait at least ten years before a reliable method is developed and accepted.

## N-ALLYLNORMORPHINE.

N-ALLYLNORMORPHINE was first synthesized in 1942, its most notable action being that it antagonized the effects of morphine on the respiratory system. A good deal of work has been done on it since then, but the mechanism of its main action has remained obscure. With the object of inquiring into this, C. M. Landmesser, S. Cobb and J. G. Converse[1] have made observations on a series of patients who had respiratory depression following nitrous oxide and oxygen anæsthesia for various surgical procedures during which relatively large doses of morphine or "Demerol" were administered to supplement the anæsthesia. Their main finding is that N-allylnormorphine is effective in reversing the respiratory depression of morphine, "Pethidine", "Omnopon", "Dilaudid" and "Physeptone", but not that produced by thiopentone, cyclopropane, "Seconal" or ether. It has only a mild analeptic action, and when it was given to normal subjects, the respiratory rate was not affected and the minute volume was uniformly reduced. When it was given subcutaneously to addicts, the "abstinence syndrome" was produced in fifteen minutes. Each of the nine patients was given moderately large doses of morphine during the anæsthesia, so that a definite respiratory depression was produced, and then observations were made during the recovery period. Before the N-allylnormorphine was given, the respiratory rate and minute volume were reduced, and carbon dioxide was used to stimulate respiration during its administration; the arterial oxygen saturation was normal throughout the experiments, whereas the arterial carbon dioxide level was high at this stage and was further raised during the period of carbon dioxide administration. After the administration of five milligrammes of N-allyl normorphine, there was a marked and sustained increase in the respiratory rate; the tidal volume increased to above normal level and then gradually returned to normal in five minutes. The minute respiratory volume was above normal after stabilization, whereas the arterial carbon dioxide level was normal after five minutes. There were no circulatory changes due to the drug, and there was definite mild analeptic effect in six of the cases. The administration of carbon dioxide at this stage produced an increase in the respiratory rate, tidal volume and minute volume and an increase in the arterial carbon dioxide level; but when the figures were compared, the arterial carbon dioxide content was consistently higher for corresponding degrees of respiratory activity before than after the administration of N-allylnormorphine. Although the respiratory responses to carbon dioxide before and after administration of N-allylnormorphine were similar, they were at different thresholds. These results have led Landmesser, Cobb and Converse to state that the mode of action of N-allylnormorphine is to return to normal the morphine-depressed sensitivity to carbon dioxide of the respiratory centre; so that the previously raised carbon dioxide level causes an increased respiratory effort till it falls to a normal level, when the respiration becomes stabilized. As N-allylnormorphine acts only against chemically related compounds, it seems a reasonable theory that it displaces morphine from certain receptors in a competitive fashion; this theory allows explanation of the mild depressant properties of N-allylnormorphine itself. The drug also reverses the analgesic action, and the addict quickly develops the "abstinence syndrome".

[1] *Anesthesiology*, November, 1953.

## MEDICAL ASPECTS OF TATTOOING.

TATTOOING has been practised by men from six millennia, and evidence of it has been found from the Poles to the Equator. Hugh Garner has found the basis of its use variously in "tribal custom, snobbish adornment and finally a vulgar affectation". He considers that among most Western peoples, it is "at best a juvenile indiscretion, and at worst a thing of shame and loathing to those of us who are tattooed". Garner is quoted in an informative article recently published by H. Beerman and R. A. G. Lane[1] in which a survey is made of some of the literature concerning the medical complications of tattooing. The true medical literature dates back for about a century and is quite extensive. No satisfactory statistical study of incidence has been made, but information available shows that tattooing is still common. In Honolulu, in 1943, between 300 and 400 men were being tattooed per day, more than half belonging to the United States Navy. Analysis of 9000 necropsy reports at Cook County Hospital in the United States revealed that 8·79% of white males and 0·71% of white females were tattooed. However, the incidence of complications appears to be very low in relation to the total number of persons tattooed.

Before examining the reports of complications in detail Beerman and Lane record some interesting facts about the tattooing process. The list of pigments or dyes used is long and varies widely in colour range. Investigation has shown that the fate of the injected pigment depends on its solubility and the depth of its injection. Soluble pigment, whether injected into the dermis or the epidermis, finds its way into the capillaries of the papillary body and is excreted. Insoluble pigment injected into the epidermis spreads out at the site of injection and gradually moves up to the *stratum corneum*, to be extruded. Consequently all epidermal tattoos must be temporary. Insoluble pigment injected into the dermis gradually migrates to take up a perivascular position, there forming masses of pigment with other collections. Such masses are distributed in the horizontal plane; intervening areas tend to be free of pigment. Tattooing has been carried out with an electric machine since 1890. In this a group of fine steel needles vibrate up and down at a speed of from 1000 to 3000 per minute, penetrating the skin to a depth of one-sixty-fourth to one-thirty-second of an inch. The sensation is like that of a mosquito bite. Pre-operative and post-operative care have always been minimal, and in some cases, "much worse than that"; yet the incidence of pyogenic infections is very low, not one case having been reported in the last fifty years. The usual after effect of tattooing is an acute inflammatory reaction, which is regarded as being due more to actual physical injury than anything else. This lasts for one or two weeks, the design being obscured by a serosanguinous exudate and crusts. Then the crust separates, and a relatively clear and clean tattoo is left. Usually the blue parts are level with the skin surface or only slightly raised, but the red zone may remain slightly raised for a long period; in one reported case the reaction lasted for seven years. Beerman and Lane state that no foreign body reaction to the pigment has been described, and it seems that "the pigment exerts an extremely benign influence on the homeostasis of the dermis".

Various classifications have been suggested of the complications of tattooing, but Beerman and Lane have placed them in three groups: Group 1 (immediate) consists simply of the acute reaction already described; Group 2 (early) includes the transmission of local or systemic disease into the tattoo; Group 3 (delayed) is divided into diseases associated with areas of lowered resistance,

[1] *Am. J. M. Sc.*, April, 1951.

mercurial sensitivity reactions and a miscellaneous group. Of the early group of complications syphilis is the most important. There may be a typical primary chancre, directly transmitted from an open lesion of an infected tattoo artist (especially through saliva on needles or applied to the skin), lesions of secondary syphilis or syphilids, which tend to avoid red areas produced by tattooing with mercuric sulphide. Only a few cases of tuberculosis have been reported, all about the turn of the century. As was mentioned before, pyogenic infections have been rare despite the conditions under which tattooing has often been performed. It is suggested that the intense immediate inflammatory response and certain of the pigments used may sometimes exert a bactericidal action. Leprosy has been described in association with tattoos in three cases, though the exact relationship is not clear. Curiously enough, two of the three reported cases were in United States marines tattooed successively by the same man in Melbourne, while they were in Australia in 1943. A severe vaccinia reaction has been reported in a recent tattoo.

In the delayed reaction group diseases described as being associated with areas of lowered resistance include chronic discoid *lupus erythematosus* and psoriasis. The second section of this group, mercurial sensitivity reactions, are the commonest complication of tattooing apart from the immediate response. The persistent elevation of the red portion previously mentioned is usually of this nature, the usual red pigment being mercuric sulphide. More usually the initial reaction quickly subsides, and evidence of mercurial sensitivity follows the use of a mercurial preparation applied elsewhere on the skin or taken internally, or it may occur spontaneously. Diseases in the miscellaneous group include sarcoid, reticulo-histio-sarcoma, keloid, malignant melanoma and papilloma. These are rare.

Another interesting aspect of tattooing is removal of tattoos for people who want to be rid of them. Beerman and Lowe refer to the psychological implications of tattooing, especially the impulsive nature of the desire to be tattooed. Many repent at leisure and seek release. The most satisfactory method of removal is by surgical excision, with skin grafting if necessary. The dermatome also has been used successfully. Success has been achieved with chemicals which lead to shedding, but chemical scars also have resulted. Another method recently suggested is removal with sandpaper. Tattoos have also been obscured by further tattooing with neutral or flesh-coloured pigments, a method sometimes used for the cosmetic improvement of capillary hæmangiomata. Undoubtedly the most unusual surgical aspect of tattooing is the suggestion that surgeons might tattoo their initials and the date beside their operation scars. After all, surgery, like medicine, is an art as well as a science.

## CELL PROLIFERATION IN PLANT GALLS.

IF there is one lesson given to biology and medicine by chemotherapy it is the close kinship between all forms of living structure, simple or complex, plant or animal. Until the synthetic chemist can prepare specific antibodies, and this is a long time ahead, the pharmacologist and therapeutic practitioner must keep in mind that what injures the parasite must injure the host, and therefore it is in the margin, often small, between curative doses and lethal that the physician must work. This physical and chemical affinity between plant and animal might reasonably be expected to help in the study of malignant disease; for instance, we have in the common gall an example of rapid cell proliferation, useless to the host, produced by some agent present in the invading parasite or its egg; in the case of the oak gall the larva of the hymenopterous insect Cynips. Some galls arise from the slowing or arresting of growth activity, but such action is easily accomplished and in most cases is easily explained; on the other hand, excited cell multiplication in the plant is most suggestive of cancer in the animal, and it is certainly curious to note how little attention has been paid to this analogous departure from normality. Whatever be the substance secreted by the larva or deposited with the egg, it apparently can exercise a specific stimulation; in one form of gall a tuft of woolly hairs has been ascribed to an enormously developed pubescence of the young oak leaf.

In the comprehensive survey of cancer entitled "The Physiopathology of Cancer", reviewed in this journal, the British investigator Dr. Alexander Haddow, briefly refers to crown gall tumour, but is hesitant to apply to animals any principle here developed. In the meantime botanists have been busy with the problem. Galls can be formed by various chemical substances possessing a ring nucleus with an acetic acid side chain attached to the ring by oxygen. J. W. Mitchell and W. H. Preston[1] report an extended research which has been made into gall formation, especially of the secondary type, that is, produced at some distance from the site of the primary, following the application of α-methoxy-phenylacetic acid or MOPA. Many different plants have been tested and found responsive, and a wide variety of chemical derivatives is at the present time being examined in this connexion. Without any disparagement of the laborious efforts of cancer researchers in all civilized countries, it may be suggested that there is something here to be examined with care.

## THE INTRAVENOUS ADMINISTRATION OF TRYPSIN.

THE intravenous injection of solutions of crystalline trypsin has been recommended for the treatment of intravascular thrombosis. The idea was that the proteolytic enzyme would dissolve the protein thrombus. This would seem to be rational provided no harmful reactions occurred from other activities of the trypsin. It has been known for many years that small amounts of trypsin accelerate in-vitro clotting and that larger amounts inhibit clotting. Various people have noted death, with extensive intravascular clotting, when trypsin was injected into animals. Innerfield and his co-workers claimed that crystalline trypsin could be safely administered intravenously in large quantities (100 milligrammes per kilogram of body weight) provided the concentration was low and the rate of administration slow. A. Taylor, R. S. Overman and I. S. Wright decided that such a potentially dangerous procedure required further investigation.[2]

When crystalline trypsin was rapidly administered to rabbits intravenously death was quick in most cases, with extensive intravascular clotting. When larger amounts were administered slowly in low concentrations there was a considerably reduced death rate, and death was due to other causes than thrombosis, generally hæmorrhage, for practically no fibrinogen could be demonstrated in the blood. Large doses of trypsin prolong the prothrombin, calcium chloride and clotting times indefinitely, reduce antithrombin levels and eliminate fibrinogen if in large enough dose. When thrombi were artificially produced in rabbits' ear veins, trypsin administered intravenously produced no change whatsoever in the thrombus. It was not possible to demonstrate any fibrinolytic activity of the blood after the injection of even 100 milligrammes of trypsin when the fibrinogen had practically disappeared and the blood was incoagulable.

As the result of these and other experiments the authors conclude: (i) There is insufficient evidence to justify the use of trypsin for therapeutic purposes in man. (ii) The intravenous use of trypsin in sufficiently large doses to produce measurable effects on the clotting mechanism is associated, in rabbits, with grave dangers, especially of intravascular clotting, hæmorrhages into the tissues and focal necroses. (iii) Minute doses cannot be shown to have any demonstrable effect on the blood clotting mechanism. (iv) Neither large nor small amounts of trypsin given intravenously have any therapeutic effect on artificially induced thrombi.

[1] *Science*, May 21, 1954.
[2] *J.A.M.A.*, May 22, 1954.

# Abstracts from Medical Literature.

## THERAPEUTICS.

### Antibiotics in Amœbiasis.

G. McHARDY AND W. FRYE (*J.A.M.A.*, February 20, 1954) report the effects of the newer antibiotics in the management of intestinal amœbiasis. The results indicate that with "Terramycin" the recurrence rate is 8·5% and with "Aureomycin" 16·6%. With fumagillin the recurrence was 14%. It is concluded that "Terramycin" is the drug of choice in the management of intestinal amœbiasis. Fumagillin is also an efficient amœbicidal substance. The authors emphasize that if adequate dosage is not used, the results will not be satisfactory.

### Bilateral Adrenalectomy for Severe Hypertension.

RALPH F. BOWERS (*J.A.M.A.*, January 30, 1954) discusses bilateral partial adrenalectomy for severe hypertension, and reports 20 cases. The indications for the operation are defined as (i) malignant hypertension that cannot be controlled by medical therapy, (ii) chronic hypertension with pronounced organic changes and (iii) Cushing's syndrome. The one definite contra-indication is a poor degree of function in the nephrosclerosing kidney. Pre-operative and post-operative management is most important. At the first operation, the left adrenal gland is removed; a remnant about the size of the little finger nail is left *in situ* at the lower pole where the main vessels enter the gland. The second operation, which involves the total removal of the right adrenal gland, is performed after an interval of from two weeks to three months, dependent upon the condition of the patient and the height of the blood pressure. The anterior abdominal route was used in this series of operations. Ordinary preparation is used for the first operation, but a special plan of cortisone and DOCA administration is adopted prior to the second operation; in the immediate post-operative stage 50 milligramme doses of cortisone are given every six hours. Around the fourth to the seventh day reduction in cortisone dosage is begun, watch being kept for evidence of the hypoadrenal state. The patient must be vigorously treated if hypoadrenalism appears in any great degree. The cardinal prodromal symptoms of anorexia, weakness, nausea and vomiting, in that order, are usually evident when the hypoadrenal state is threatening; then the dosage of cortisone should be increased before the blood pressure falls to a subnormal level. All the survivors in this series showed great symptomatic improvement in relation to their hypertensive symptoms. Of six deaths in the immediate post-operative period, five were in extremely desperate cases. Of the 21 survivors, 20 regained normal blood pressure readings; in the remaining patient the readings were merely reduced. Hypoadrenalism was present in all cases. The author admits that the maintenance management of these patients is tedious, difficult and not without danger. From his experience, he makes the following observations: (i) Indications for this surgical procedure are known and can be fairly accurately estimated. (ii) The pre-operative and immediate post-operative care are easily and safely established. (iii) Operation by the anterior abdominal approach permits accuracy, is not difficult for the operator accustomed to gastric or pancreatic surgery, is not time-consuming, has not been attended by many technical errors and appears to be safe. (iv) The only phase of this investigation that denies the procedure the dignity of being routinely accepted is the maintenance management. The author considers that with the present hormonal substitutive drugs, the reasonable hope for better agents in the future and the increased skill of medical workers, the dangers of this operative procedure can be successfully overcome.

### The Treatment of Hypertension with Drugs.

MILTON MENDLOWITZ (*Ann. Int. Med.*, November, 1953) discusses the treatment of hypertension with drugs. He states that it is generally agreed that the cause of hypertension is narrowing of the terminal vascular bed of the systemic circulation, especially the arterioles. It is also agreed, though with some dissension, that there are three major causes of such narrowing; one is increased discharge via the sympathetic nervous system, another increased vasomotor tone produced either by circulating substances or by metabolic changes, and the third structural changes in the vessels themselves, frequently influenced at least in part by the first two factors. It is postulated that, in the ordinary hypertensive, the neurogenic factor is usually the first and, as believed by some, the initiating factor in the process. The humoral or metabolic element contributes later, when the kidney participates in the disease; this accelerates the condition by increasing vasomotor tone, and finally the structural changes in the arterioles produced in part by these influences turn the screw tighter. The treatment of hypertension should be undertaken only when that disease under observation represents a hazard to a patient's life or health. Drug therapy is usually directed at the neurogenic factor, and a variety of drugs is available for blocking the motor synapses and nerve endings concerned in the excessive sympathetic nerve discharge believed to be a factor in hypertension. The limiting factors are usually tolerance and side reactions. At the cortical level, barbiturates are the most useful drugs, although these may be replaced eventually by *Rauwolfia serpentina*. At the hypothalamic level, 1-hydrazinophthalazine and protoveratrine are the most effective, whereas at the ganglionic level, hexamethonium bromide or chloride is the drug of choice. Parenteral administration of the latter drug is preferred to oral administration, because of the inherent serious dangers of the oral route. Block of sympathetic nerve endings, of smooth muscle or of capillaries, is at present of minimal practical value in the treatment of hypertension. Salt depletion by diet and dietary adjuvants appears to affect the non-neurogenic or intrinsic factors in hypertension. Sympathectomy should be reserved for patients with a large neurogenic element who fail to respond to adequate medical therapy. In many cases, judiciously combined treatment provides the most satisfactory results.

### The Chemotherapy of Tuberculosis.

WILLIAM B. TUCKER (*Ann. Int. Med.*, November, 1953) reviews the current status of the chemotherapy of tuberculosis, and states that from a number of different cooperative studies it has been possible to establish in the last few years the superiority of certain variables in the treatment of this disease. A combination of one gramme of streptomycin administered twice a week with twelve grammes daily of PAS for periods up to one year has been found to result in a high degree of therapeutic efficacy and relatively little toxicity and drug resistance. Isoniazid in combination with streptomycin or with PAS also appears to be effective, although the recency of its advent has not yet permitted as complete an evaluation as with streptomycin and PAS. Results of chemotherapy in general are less satisfactory when there has been prior chemotherapy than in "original treatment" patients, and this is in fact related to drug resistance. When partial streptomycin resistance has developed as the result of prior streptomycin therapy, some benefit is nevertheless to be derived from continued streptomycin therapy unless that resistance is found to be as high as complete resistance to 100 microgrammes per millilitre. The availability of isoniazid as a second effective drug improves the clinical outlook in these cases. When drug resistance to both streptomycin and isoniazid has developed, viomycin is found to be an effective anti-tuberculosis agent, though probably of more limited efficacy than streptomycin or isoniazid. It is desirable always to give combined therapy with more than one antituberculosis drug, and PAS appears to be the preferred drug to give with either streptomycin or isoniazid. When tolerance to PAS exists, "Terramycin" may be employed as a substitute. Effective chemotherapy in tuberculosis results in the resolution of the reversible components of the disease in a high percentage of cases, leaving residual fibrosis and necrosis. The best clinical management of such residual tuberculous disease in association with prolonged effective chemotherapy has not been determined with precision.

### Pemphigus and Oral Cortisone Therapy.

A. H. CONRAD, J. GREENHOUSE AND R. S. WEISS (*Arch. Dermat. & Syph.*, January, 1954) state that when cortisone for oral administration became available, the manufacturers placed at the authors' disposal a large supply of the drug for use in the treatment of pemphigus. In this report eight cases were reported in detail, five of *pemphigus vulgaris*, two of *pemphigus erythematosus* and one of *pemphigus foliaceous*. The first was a case of *pemphigus vulgaris* showing no response to corticotropin (ACTH) therapy; with oral cortisone therapy the eruption cleared up almost entirely. Case 2 was also one of *pemphigus vulgaris*, in which treatment was a failure with ACTH; but with oral cortisone therapy the eruption was controlled. Case 3 was one of *pemphigus foliaceous*, in which treat-

ment with cortisone produced little or no effect. Case 4 was one of *pemphigus erythematosus* with gradual control of the lesions by administration of cortisone by mouth. Case 5 was a similar case in which cortisone was used orally; the patient made an almost complete recovery. Case 6 was one of *pemphigus vulgaris*, in which the lesions cleared with the administration of cortisone by mouth and heparin sodium. Case 7 was an extremely severe case of *pemphigus vulgaris*, in which lesions cleared on two occasions while the patient was taking cortisone by mouth. Case 8 was one of *pemphigus vulgaris*, in which the skin cleared with oral cortisone therapy, only to become worse, and the patient ultimately died despite resumption of the administration of cortisone by mouth. The authors consider oral administration of cortisone as effective in the treatment of pemphigus as the use of the drug parenterally. With careful administration and observation, toxic phenomena can be controlled. Cortisone does not cure pemphigus.

## NEUROLOGY AND PSYCHIATRY.

### Chronic Barbiturate Intoxication.

H. E. HILL AND R. E. BELLEVILLE (*Arch. Neurol. & Psychiat.*, August, 1953) discuss their investigations of ten male patients suffering from chronic addiction to barbiturates. These patients were treated in hospital for periods ranging from thirty-five to ninety days and given maintenance doses of "Seconal". Observations were made during the last week of addiction, after abrupt withdrawal of the drugs and after recovery. The observations were made on readiness to respond and on muscular coordination. The authors conclude that in view of the severe muscular incoordination suffered in these cases, together with the lack of ability to acquire and maintain readiness to respond, the general behaviour of chronic barbiturate users is severely impaired. These persons lack the ability to prepare for and react efficiently in performing manipulative tasks, and moreover they cannot anticipate emergencies and therefore are very unsafe machine operators.

### Electroencephalographic Findings Associated with Subdural Hæmatoma.

E. A. RODIN, R. G. BICKFORD AND N. J. SVIEN (*Arch. Neurol. & Psychiat.*, June, 1953) review the records of 45 cases of surgically proven subdural hæmatoma. Eight of the patients were children less than ten years of age, and the rest were adolescents and adults. In most of the cases the condition was chronic. The most significant finding for the entire series was the occurrence of focal slow waves. Alpha rhythm was present in only 48·1%. The electroencephalogram was less helpful in diagnosis in the childhood group than in the adolescent and adult group. The suppression of alpha rhythm was associated not only with the posteriorly located hæmatomata but also with anterior ones. The response to photic stimulation was not a reliable index to lateralization. The authors point out that differences of amplitude can lead to wrong lateralizations in cases in which a subdural hæmatoma cannot be suspected either from the clinical history or from the electroencephalographic findings. The occurrence of dysrhythmic components in the recording is observed and discussed in relation to the role the brain stem may play in the production of these findings. The relation of neurological to electroencephalographic findings is brought out, and the results seem to indicate that the majority of the dysrhythmias were due to damage of the brain stem.

### Tremor and the Bulbar Reticular Formation.

F. L. JENKNER AND A. WARD, JUNIOR (*Arch. Neurol. & Psychiat.*, October, 1953), describe experiments on the brain stem in monkeys in which high frequency electrical stimulation of the medial reticular formation produced a rhythmically alternating peripheral movement analogous to tremor. This could be elicited from the entire extent of the medial reticular formation, from a level just rostral to the *nucleus ruber* caudally to the pyramidal decussation. This evoked tremor may be differentially reduced or abolished by parenteral administration of anticholinergic drugs, the most effective drugs being those which have been demonstrated to be clinically useful. Of 10 new synthetic drugs tested, none was as effective as scopolamine or "Diparcol" in suppressing this evoked tremor. The authors advance the hypothesis that the lesions in the rostral tegmentum or lower diencephalon which produce tremor such as that seen in Parkinsonism interrupt projections to these neurons in the medial reticular formation. These deafferented cells subsequently become hypersensitive to acetylcholine. Activation by locally liberated acetylcholine then yields the observed tremor. For this reason, suitable anticholinergic drugs reduce the tremor in Parkinsonism.

### Electroshock and the Adrenal Cortex.

J. R. ROYCE AND H. E. ROSVOLD (*Arch. Neurol. & Psychiat.*, October, 1953) report experiments with rats in which the adrenal glands were studied after chronic electroshock administration. A significant increase in adrenal weight of from 20% to 40% was observed in rats after chronic electroshock administration. During the hours following a single electroshock a depletion of adrenal ascorbic acid and cholesterol has been noted. Twenty-four hours after the tenth, and final, electroshock in another group of animals, an increase in the total ascorbic acid content, proportionate to the increase in weight, of the hypertrophied adrenals was found. This suggests a functional hypertrophy. Animals receiving anticonvulsant drugs did not have convulsions following electroshock, and their adrenals were enlarged. However, animals receiving the drugs alone also showed significant adrenal hypertrophy. Animals which were rapidly given 10 non-convulsive electroshocks in succession showed a significant adrenal hypertrophy above that of controls receiving only one electroshock. No adrenalectomized animals survived longer than a twelve-day course of daily electroshocks, and each required artificial respiration after each shock, prior to death. Adrenalectomized animals bearing adrenal transplants survived a sixteen-day course of daily electroshocks and required no artificial respiration. A very rapid growth and maturation were noted in one of these transplants. The authors discuss these observations as well as the possible mechanisms by which electroshock exerts its endocrine effects.

### The Initial Interview.

W. J. HENDRICKSON, R. H. COFFER, JUNIOR, AND T. N. CROSS (*Arch. Neurol. & Psychiat.*, January, 1954) discuss the difficulties of the first interview and stress the point that it differs from all other interviews in psychotherapy. They state that the approach may be mechanically diagnostic or too intensely humanized. Whilst a proper doctor-patient relationship is being developed, the initial interview must be primarily diagnostic. The most effective approaches are made indirectly and must not be too probing and categorical.

### Studies on the Blood-Brain Barrier with $P^{32}$.

LOUIS BAKAY (*Arch. Neurol. & Psychiat.*, July, 1953) discusses his studies on the embryonic and maternal blood-brain barrier, rabbits being used for his subjects. The concentration of $P^{32}$ in the blood, brain and other organs was estimated in rabbits twenty-four hours after a single parenteral injection. Five of the animals were pregnant. The turnover of $P^{32}$ was found to be more rapid in the fœtal and young brain than in the adult organ. The findings indicated the existence of blood-brain barrier for $P^{32}$ even in the fœtus, and the permeability of the barrier was greater in the fœtus than in the adult. The author reports also a comparison of the $P^{32}$ concentration in maternal and fœtal organs in human subjects. He discusses the transfer of various tracers and the metabolism of the fœtal brain with special regard to the concept of the blood-brain barrier.

### Idiopathic Convulsions in Later Life.

J. G. OATMAN (*Arch. Neurol. & Psychiat.*, February, 1954) deals with the incidence of idiopathic convulsions in later life. His material consisted of 212 war veterans who had had a complete history taken and extensive physical and social examination made. The patients had been under survey for from one to five years. In 125 cases (58·97%) the onset had been between the ages of twenty-one and thirty years, and in 41 cases (19·34%) between thirty-one and forty years. The author concludes that the onset of convulsions in later life is not presumptive evidence of organic brain disease, and that it is not uncommon.

### Spinal Cord Compression Studies.

I. M. TARLOV AND H. KLINGER (*Arch. Neurol. & Psychiat.*, March, 1954) consider time limits for recovery after acute compression of the spinal cord in dogs. One of three types of balloons were inserted after a preliminary laminectomy. After full recovery or when the condition was stationary, the dogs were killed and the cord was sectioned. Whilst one minute of large compressive force was accompanied by recovery, longer periods produced an irreversible reaction. With a lesser force there was a critical period of thirty minutes. Functional recovery was found to begin as early as one to five days after compression or to be delayed as long as thirty days.

# Medical Education.

## TRAINING FOR GENERAL PRACTICE.

A CONFERENCE on medical education, dealing specially with "Training for General Practice", was held at the School of Public Health and Tropical Medicine, University of Sydney, on May 3, 1954. The conference had been convened by the Post-Graduate Committee in Medicine of the University of Sydney, and all members of the medical profession had been invited to attend. The gathering took the form of a panel discussion. Dr. V. M. Coppleson, Honorary Director of the Post-Graduate Committee, was chairman of the panel, and the members of the panel were: Dr. Ewen Downie, Dean of the Clinical School at The Alfred Hospital, Melbourne; Dr. T. Holcombe, representing the College of General Practitioners; Dr. J. G. Hunter, Medical Secretary of the New South Wales Branch of the British Medical Association; Dr. C. J. McCaffrey, of the Royal Newcastle Hospital; Dr. K. C. Rawle, a general practitioner from the country. DR. A. M. MCINTOSH, Chairman of the Post-Graduate Committee in Medicine, occupied the chair.

### Introductory Remarks.

In opening the proceedings, Dr. A. M. McIntosh said that one of the peculiarities of the meeting was that there would be two chairmen. He was to be chairman for a few minutes just for the purpose of welcoming those present and thanking them for the interest they had shown in accepting the invitation of the Post-Graduate Committee in Medicine, which had arranged a series of three conferences on the question of various problems of medical education. The gathering was the first of the conferences and was entitled "Training for General Practice".

Before the chairman of the panel took over, Dr. McIntosh asked Sir Charles Bickerton Blackburn, Chancellor of the University of Sydney, to make some introductory remarks.

SIR CHARLES BLACKBURN said that it was a very great pleasure to see that so many had shown a genuine interest in the training of general practitioners by being present. It was a subject which he had felt for quite a long time was inadequately attended to in medical training, but it was actually rather difficult to say what should be the type of training for the general practitioner.

Generally, when people spoke about general practitioners, specialists and so on, Sir Charles Blackburn thought they were mostly thinking of the earlier days, when a general practitioner was a person, an individual in charge of a practice, who had a personal relationship with various families, and as they grew up he was their guide, philosopher and friend apart from their medical or surgical ills. That was the kind of person who had always been spoken of as the man representing the typical relationship of practitioner and patient.

In the discussion which was going to take place, they should keep in mind that that position had very much altered in recent years. For instance, much group practice was going on—not that he was suggesting that group practice was not a good thing; indeed, so far as the profession was concerned, it was an excellent thing: it gave a man more leisure to read, more leisure to enjoy his life, and more opportunity for going away to do post-graduate training. So far as his relationship with the patient was concerned, it had become very different. In the old days, if a patient did not like a doctor—and after all they had to remember that there was a good deal of truth in the old saying, "I do not love thee, Dr. Fell; the reason why I cannot tell"—when he had a choice of three doctors and did not like a particular doctor he could change over to another, but it was very different when there was a group. Sir Charles Blackburn was talking to a lady not long before, who said it was sometimes very awkward. She was an elderly woman and for many years had had a doctor who had been the family doctor and had brought her into the world. When he died his son took over and he became her doctor. Lately, however, he had taken a partner, whom she did not like so well, but when she had rung up the other day she could not get either of them—they had gone away fishing—and she had to see the locum. Such difficulties would have to be taken into account when the question of training for general practice was being discussed.

General practice in Australia, at any rate, had a very much better equipped man than the general practitioner who used to grow up in Great Britain.

Sir Charles Blackburn was afraid that he had no further contribution to make, but he suggested that they should come down to practical facts when they talked of the general practitioner and not think of him as the simple-minded man who whenever he was in difficulty called in a consultant. Most of the general practitioners today felt that they did not need consultants nearly so often as their predecessors.

Dr. McIntosh then handed the meeting over to the panel.

DR. V. M. COPPLESON explained that at that, the first of the three discussions which would be held, they would be concerned with preliminary education for general practice. They would not be concerned with the education of practitioners after they had begun to practise, but purely with the problems of training prior to entrance into general practice.

The main problems which in his opinion should be decided at that conference were: (i) What special training was required before practice was begun. (ii) How much of that belonged to (*a*) the undergraduate period, (*b*) the period in residence in hospitals often referred to as the internship, (*c*) the period between the internship and the commencemen of practice.

During this discussion reference would be made to methods of training which had been advocated in the United Kingdom and other countries, but it had to be remembered that general practice in Australia was not necessarily the same as general practice in the United Kingdom or in the United States of America. There were distinct differences and he hoped that proposals would emerge which would specially suit Australian conditions and climate. They were very fortunate in those who had consented to constitute the panel. They had with them Dr. Ewen Downie, of The Alfred Hospital, Melbourne, who had studied the problem and had introduced into The Alfred Hospital, Melbourne, some very interesting methods about which he would tell them.

Dr. John Hunter needed no introduction. He would speak of the interest of the British Medical Association in this particular type of training and explain the various steps which had been taken by the British Medical Association in Great Britain to investigate it. Dr. C. J. McCaffrey, of Newcastle, was there because his hospital had adopted a special three-year course of training for general practice, which he would discuss and which was a course of training which Dr. Coppleson thought had certain features different from any other type of training of the kind in Australia.

Dr. T. Holcombe was representing the College of General Practitioners, and Dr. K. Rawle, of Orange, was there to talk as a practitioner with no particular attachment at all, who would speak from the point of view of the general practitioner.

### Objectives.

Dr. Coppleson explained that the panel discussion would be in two parts. The first, which was concerned with aims and objectives, would mainly be dealt with by Dr. John Hunter and Dr. T. Holcombe. All the members of the panel would then discuss the question of methods, and particularly methods that might apply in Australia.

DR. JOHN HUNTER said that he proposed to refer briefly to the considerations that had been given to the question of the training of the general practitioner overseas.

Since the publication by the Carnegie Foundation in 1910 of the monumental work of Abraham Flexner, many reports had been produced in the English-speaking countries—in America by the Association of American Medical Colleges and the American Medical Association; in Great Britain by the Ministry of Health, which published the Report of the Inter-Departmental Committee on Medical Schools; by the Planning Committee of the Royal College of Physicians; and by the British Medical Association, which published two reports, one in 1934 and one in 1948. Despite the publication of all those reports there was still some doubt in the minds of many educationalists in regard to the future of medicine and particularly the future of general practice.

Much concern had been expressed in Great Britain regarding the future of general medical practice, in relation to both the standard of medical practice and the status of the general practitioner. And so in 1950 the British Medical Association had appointed a committee under the chairmanship of Sir Henry Cohen, professor of medicine, University of Liverpool, to report on the training of the general practitioner after registration.

Now that was an important point. The term of reference was only to the education of the general practitioner after registration. The committee endorsed the views which had been expressed by the committee of the British Medical Association which in 1948 prepared the document "The

Training of a Doctor", and the recommendations of that Committee were as follows:

> The aim of medical education is not to impart to the student a mass of factual information in each branch of medicine, but to equip him with sound basic principles, including the scientific outlook and method, a knowledge of the fundamentals of the medical sciences, competence in, and understanding of, certain indispensable techniques, and an intellectual resourcefulness and initiative in the handling of unusual and unexpected situations. The Committee does not, therefore, accept in its full implication the oft-reiterated view that the aim of the curriculum should be to produce a competent general practitioner. General practice is a special form of practice which must be founded on general basic principles and appropriate post-graduate study. In the Committee's view the undergraduates' medical course should be primarily concerned with the training in those basic principles of medicine which are a necessary foundation for all forms of medical practice. If, as the Committee believes, the purpose of the intern year is to consolidate the training received by the student prior to his final examination, it should obviously be based on the same conception of medicine as the curriculum itself. It should be a continuation of a basic general principle in medicine that serves as a foundation either for training in a specialty or general practice.

So it was quite clear from the report of that committee that in Great Britain they had not favoured any special means of training the general practitioner during his course of undergraduate study.

It was interesting to note that this had been the general consensus of opinion at the World Conference on Medical Education held in London in August, 1953. At the concluding plenary session Professor A. Hurtado, who presided over the section dealing with technique and methods in medical education, made the following remarks on the subject of basic training:

> One of the questions asked was as follows. As it is certain that the great majority of the students will eventually enter the profession as general practitioners, should medical education rather be of a general nature, so as to make the student familiar with the most important scientific facts in all branches of medicine, leaving the final specialized instruction and orientation until later?
>
> The question was discussed at great length. We are entirely in agreement with the second alternative. We believe that training for general practice, just as for specialization, belongs to the post-graduate period. Whatever the branch of medicine, there is no substitute for a thorough scientific preparation and grounding in the basic knowledge for all types of professional activity. We believe that it is wrong to orientate undergraduate instruction towards the requirements of closely defined activities. Nor must we forget that the objects of medical education are not purely and simply the preparation of good doctors, whether general practitioners or specialists, it is during the student period that a vocation for teaching or a leaning towards research may be awakened.

The rejection of the idea that an object of undergraduate training should be to train general practitioners did not, of course, necessarily mean that the curriculum should remain static or that nothing could be done that would improve the education of the medical student who proposed to enter general practice.

As the committee in its report "The Training of a Doctor" said:

> The clinical training given at the present time is misdirected in aim, structure and balance. Its general purpose should be to teach the student the general principles of medicine, to train him to a sufficient degree of skill to diagnose and treat common ailments in minor medicine and surgery, to recognize conditions for which he should summon more expert help, and so orientate his attitude to medicine that he sees his patient as a whole, the inculcation in the student by all teachers throughout the clinical period of the place, importance and significance of social medicine. Field work should include visits to see various public health services and clinics in action.

There were, however, some medical educationalists in Britain who were of the opinion that students should be given instruction in general practice, and one of the most interesting experiments in that regard was being carried out by the University of Edinburgh, which decided to establish a "Teaching General Practice" based on one of its public dispensaries.

Of the 21 medical schools in the United Kingdom, general practice schemes were organized in nine.

On the subject of the immediate post-graduate education of the general practitioner following registration, the committee in its report on "The Training of the General Practitioner" had made the following recommendations:

> (1) A period of three years should elapse between registration and the assumption of independent general practice, just as entrants to other special branches are expected to devote some years to their training.
>
> (2) For the first of the three years the young practitioner should act as trainee assistant to an established general practitioner.
>
> (3) The second year should be spent in specially designed and preferably residential hospital appointment.
>
> (4) The third year should provide supplementary training at the choice of the trainee, e.g., further assistanceship, locum appointments, senior training appointments in hospital departments.
>
> (5) During his training period the trainee for general practice should receive adequate remuneration for his work.
>
> (6) The organization of the training would be in the hands of a post-graduate committee and dean appointed by the university or medical school.

Dr. Hunter then made a few remarks on the position in the United States. There, there was a movement to encourage special training for general practice. The Council on Medical Education and Hospitals of the American Medical Association in its 1953 report had the following to say:

> Medical faculties and medical students show a continuing interest in education for general practice. Many medical schools report that their primary objective is the preparation of students for general practice and that the major emphasis in their teaching is for education for work in this field. A high proportion of the schools sponsor one or more programmes specifically designed to introduce students to this type of practice.
>
> The general objective of preparing students for general practice is implemented in a variety of ways in different schools. At the undergraduate level this is accomplished through general practice preceptorships, home care and family study programmes, general practice clinics, substitution of clerkships in general medical clinics for specialty clinic assignments and lectures by outstanding general practitioners on the nature of general practice and the opportunities that it offers. Experimentation with general practice preceptorships is being continued in 21 of the 79 schools. In their affiliated hospitals, 25 schools have organized internships and 18 are sponsoring residencies particularly designed to equip the physician for general practice.

The University of Colorado School of Medicine offered a number of "general practice residencies" of three years' tenure. The purpose was "to supply instruction in the major fields of medicine, surgery, pædiatrics and obstetrics. In the programme emphasis is placed on medicine and pædiatrics, with special attention to psychiatry and preventive medicine as related to the problems of the general practitioner".

In Virginia the care of the district poor was the responsibility of the university faculty. A team of clinical director, two part-time assistants, house officers, administrative and social workers, nurse, secretaries and a statistician with eight to ten medical students gave a whole-time service.

At the Boston University School of Medicine it had been the practice for the previous 75 years to include in the curriculum an assignment on the domiciliary medical service which operated from the out-patients' department of the Massachusetts Memorial Hospital.

Dr. G. P. Berry, past-president, American Association of Medical Colleges, had said:

> These experiments are provocative. They all strike hard at unsolved problems. All of them attempt in some way to draw the teaching and practice of medicine into a structural whole. In their execution errors are certain to be made and disappointments will be many.

It was clear, of course, that no uniform programme could be laid down for the training of general practitioners.

Whilst there was much to complain of regarding the status of the general practitioner in Great Britain and to some extent in the United States, there was little ground for complaint in Australia. This of course did not mean

that nothing should be done to maintain or improve that status. The general practitioner did not suffer by comparison with the specialist.

Professor D. N. Dunlop, who had visited Australia as Sims Professor in 1951, was struck by the excellence of the general practitioners, whom he regarded as "probably the best of their kind in the world". He had praised the high standard of education maintained by Australian universities.

This high status of the general practitioner was attributable to a considerable extent to the training which students received in the Australian medical schools and for which full credit had to be given to those responsible for the teaching.

As a result of that training the student was conversant with the basic principles necessary for the conduct of general practice. He knew how to take a history and how to make a physical examination, and was fully aware of their importance. He had a reasonable knowledge of therapeutics and of what his limitations were in treatment. He was well able to evaluate laboratory tests, although perhaps inclined to rely too much on them instead of on his clinical knowledge. In short, he was well fitted to become a good general practitioner, and all that was necessary was post-graduate training and experience.

DR. T. HOLCOMBE said that it was very heartening to see so many eminent members of the profession present in support of the general practitioner.

The discussion that night was for better methods of training of general practitioners, and had begun, so far as the College of General Practitioners was concerned, about 1950 in Great Britain. What he would read were extracts from general practitioner reports in Great Britain.

By 1950 it had been felt that the impact on the general practitioner in Great Britain was very severe and his general status and outlook were uncertain, and some bold spirits mooted a college which had been proposed one hundred years before and had fallen through, and which, with careful planning, came into being in 1952. Dr. Holcombe said that he intended to give a quick recapitulation of the events which led to the formation of the College in England, and although conditions were very different in Australia from those obtaining in England, what had happened there could happen in Australia, especially with a political change.

With the parent College still taking exploratory steps, he had to make a more or less authoritative statement on its behalf. He asked the audience to bear with him.

When something was to be attempted there should be some sound reason for the effort, and in this case there were grounds of the utmost importance to the profession which had to be understood before a remedy could be applied.

In England, where panel practice had accounted for a great deal of the work done, till the end of World War II any pretence at thorough clinical examination had been most unusual; a slack type of general practitioner had been evolved.

When in recent post-war years the National Health Scheme took in the whole profession, private practice as it had been known virtually ceased and the general practitioner himself had been swamped by a horde of patients seeking something for their weekly pay-out and some of the free socialistic hand-outs, which involved endless forms and paper work. The impact on the practitioner had been very severe. The doctor was frustrated clinically and the patient was poorly served. There was time neither for proper examination nor for the performance of many minor surgical procedures which were carried out in better days. The result was that casualty and out-patient wards were hopelessly overcrowded and proper hospital working was impeded.

When Dr. Holcombe was in England about four years before, there had been a dearth of nurses and hospital accommodation. Patients, medical and surgical, had been unable to have long enough in hospital for their requirements and were being sent home in an unsatisfactory state. For this alone, rehabilitation of the general practitioner service was vitally necessary. There might have been some improvement in general practice since then, but not to the extent required, one gathered.

When the scheme had come into operation it seemed that specialists secured far better terms than the general practitioners. They were assured of a living income at least. What was more unfortunate was that all work at hospitals, from the very great to the cottage variety, was to be done by specialists. Financial and clinical frustration for the general practitioner set in and had grown.

With poor general practitioners' service and crowded hospitals it had been gradually realized that something had to be done, and some bold spirits had set to work about four years earlier to revive a movement for a College of General Practitioners, first mooted in the middle of last century; it had been enthusiastically received throughout the British Isles, but came to nought through bad planning at that time.

The recent movers numbered five, and with five eminent medico-legal coopted members the College had been launched about two years previously, after sound planning. The scheme had met with the approval of all sections of the profession in the British Isles; the other colleges, the British Medical Association, the post-graduate authorities and the teaching hospitals and other bodies had given the movement their blessing and support. The object was, of course, to breed better practitioners. The time had been when the specialist was a man who had, through his own skill, a large practice and following, and who ultimately graduated to specialization because of his clinical knowledge and ability to teach in the great hospitals. He retained the human patient-doctor relationship which was so important to all medical men if they were to be of the community and realize the social as well as the medical needs of their patients. The intense desire to specialize in England had been brought about by the poor standing of general practice. The gradually evolved type of specialist who had had little or no experience in general practice, but knew only his hospitals and clinics, made him, it was claimed, unable to give his students a full comprehension of what general practice held for them.

After all, 80% of all work was done by the general practitioner. If this work, owing to whatever set of circumstances, was bad, the whole structure was imperilled. To remedy this, the new College has proposed:

(1) That whilst the basic teaching remains of the highest possible standard its application should be taught in a much greater degree by sound general practitioners to be coopted by the teaching schools.

(2) That lectures on selected subjects be included in the later undergraduate years and given by prominent general practitioners.

(3) That either in undergraduate or early post-graduate years members of the College have students or young medicos at their homes for long week-ends or whatever period they could manage. During this time they could be shown equipment and forms and be given informal talks on the functioning of a practice and the doctor-patient relationship. They could be taken on calls possibly to get the atmosphere of their future calling and some idea of what an important part they would play in the community.

One of the functions of the College would be to act as a centre of information for young practitioners on their needs in general practice, on methods of record keeping, on new methods of diagnosis or treatment and the equipment needed for these. It would thus save much muddling along without adequate guidance. Young men and women would be able to come along to an academic home of their own for guidance.

Once in practice they would be encouraged by the College to seek all forms of post-graduate instruction made available to them.

It seemed that if a keener type was thus bred and he was given a reasonable return for his services and more adequate clinical light the whole profession must benefit. If the present conditions were not remedied, despite the efforts of the new college and the profession as a whole, the old frustration and apathy would necessarily continue.

In regard to Australia, Dr. Holcombe set out views of the College of General Practitioners.

1. The standard of general practice was regarded as high, owing to greater access to hospital facilities and a greater number of smaller hospitals partially or wholly staffed by general practtitioners in suburbs and large country towns.

2. Too many were seeking specialist training because they believed that without this they would not get hospital appointments. The medical sphere was rather overloaded by struggling young would-be specialists, many of whom were doomed to mediocrity because of lack of appointments and insufficient practice. If they were to use their higher training in a subject and incorporate it in a sound general practice they probably would be happier.

3. They considered that more instruction should be given to final year students on the subject of general practice by general practitioners, as was done in England. The College had been granted two lectures to fifth year medicine this year, and other subjects were being considered by those in charge of the curriculum.

4. They trusted that the present suburban and large country hospitals would be staffed for general purposes by

general practitioners as at present and not grow into specialist centres only.

5. They hoped that students in teaching hospitals would be directed to more participation in casualty and out-patient wards to teach them the powers of quick and accurate decision, so necessary in general practice.

6. They hoped the practitioners at suburban and country hospitals would interest themselves in a scheme of more intensified training of young interns for the needs of general practice.

7. The College hoped to foster general practitioners' research work throughout the State and to add to the sum of general knowledge.

Lastly, from the present period on, they had the greatest faith in, and would cooperate with, the Post-Graduate Committee, which they believed was doing an excellent job.

### Methods.

DR. V. M. COPPLESON said that the next part of the discussion would concern methods. He asked Dr. Ewen Downie to describe new methods of training for general practice adopted at The Alfred Hospital, Melbourne.

DR. EWEN DOWNIE expressed his thanks for the honour done to both his hospital and himself in the invitation to be present. He was flattered because he felt that anything he could say could have but little bearing upon a problem as vast as the one under discussion. He explained that he had been administratively concerned with the graduation from The Alfred Hospital of 50 students annually, The Alfred Hospital being a hospital of some 400 beds with a due allocation of specialist and general medical and surgical beds. He added that he had a creed relating to medical education which placed a responsibility on his colleagues and himself to fashion a mould the product of which, on graduation, was capable of being turned on the lathe of experience. He was always concerned by the fact that it was very difficult to influence an undergraduate student's interest in anything other than the immediate ordeal of examinations which he was called upon to pass, irrespective of what it was thought he ought to be taught or ought to learn. He was a reluctant animal and would not be concerned with what his elders thought, but would be concerned only by what he hoped the examiners thought.

For this reason it seemed to Dr. Downie that, as 85% of graduates turned into general practitioners, it was peculiar that they were denied any experience such as they might be expected to find when they went into general practice. This was not at all contrary to the nature of the statement made by Dr. Hunter on the training of a doctor in the British Medical Association's report.

Briefly the following was what they had done in Melbourne. In the latter third of his third year the student was at a stage when he was about to enter the wards to be a dresser or a clerk; he was first of all sent to the nurses' preliminary training school for a week, where he was taught all the basic nursing procedures that a general practitioner might suddenly find he had to do. The students were then passed in small groups into medical and surgical wards and theatres, where they had a schedule of duties which ranged from the admission of a patient and the giving of medicines and enemas to the performance of last offices and so on, all of which had to be signed for and presented under the authority of ward sisters.

In the fourth year Alfred Hospital students, in common with all medical students in the University of Melbourne, were given the first experience of illness in its natural environment, the patient's home. For a period of one week they went out each day with the District Nursing Sisters of the Melbourne District Nursing Service. This was not obstetrical; it was general, medical and surgical work. Dr. Downie had introduced it into the university in 1948, when he was Stewart Lecturer in Medicine.

At the beginning of their fifth and final year the students were invited to go voluntarily to a camp for children conducted by the Lord Mayor of Melbourne. Ten of these camps were held yearly, each lasting a fortnight, each camp holding 300 children, allegedly healthy, drawn from country districts of Victoria. They were housed on the bay some fifty miles from Melbourne. The Alfred Hospital had adopted the camp from the point of view of both the medical and nursing services. In the first week of the camps every child was thoroughly examined from top to toe. The students went for the purpose of determining the normal standards of child health, and worked under supervision of a registrar. The number of students attending was roughly 80% to 90% of the total in any one year.

Shortly afterwards, in the month of March, students were invited to act as observers in a general practice approved by the Board of Studies of The Alfred Hospital and they went out for a fortnight. This again was done on a voluntary basis. Despite the shadow of final examinations some eight months later, 100% of The Alfred Hospital students had gone out in the previous three years for this purpose. The solid core of the scheme was the Alfred Hospital Old Residents' Association, a body which had existed for almost thirty years and whose members, Dr. Downie was glad to say, still maintained the *esprit de corps* which he hoped they were all continuing.

Prior to their going out, the students were given two lectures by a very competent general practitioner, because it had been found that this saved a great deal of time in explanation. The students were unreservedly in the hands of the practitioner, and naturally their experiences varied. Some were called by practitioners at all hours for obstetrics and emergencies; others were dismissed after evening hours. An effort had been made to interfere in this as little as possible. All students went on rounds with the practitioners and stayed in the doctors' surgeries and got a real insight for a short period into what general practice meant. It had been started for a week; it was now being done for a fortnight.

Also in the final year students were sent for a day to an industrial clinic. This was not primarily for the purpose of seeing public health amenities, lighting and ventilation, nor for the purpose of seeing the set-up of an "R.A.P.", where industrial medical experience might be gained, but to see another Alfred Hospital old "resident" who, in liaison with the personnel officer of the organization, had succeeded in fitting the partially incapacitated or physically unfit to jobs which they were capable of doing satisfactorily. This was the contribution which they were making at The Alfred Hospital at the undergraduate level.

Being concerned about these experiments, Dr. Downie had last year, in association with Professor Brown, of the Education Department in the University of Melbourne, produced a *questionnaire*. The *questionnaire* had been sent to the final year of students, to those in the immediate year after graduation and to all possible graduates of five years' standing or less. The *questionnaire* had been confidential and anonymous, and in due course Dr. Downie hoped to publish the results with Professor Brown. However, possibly there might be one or two things of interest to those present.

One question was: "Do you consider that more emphasis should be placed in clinical instruction on those conditions commonly encountered in general practice?" The score was: Yes, 128; No, 25.

A similar response had been given (124 to 37) to a question asking whether sufficient stress had been laid during the course on the economic aspect of illness and the avoidance of unnecessary expense to the patient.

A similar figure (124 to 32) requested that lectures on opportunities for recent graduates, medical book-keeping, insurance *et cetera* be given at the undergraduate level. These had now been undertaken, not as part of the official hospital curriculum, but as lectures in an informal way at the Students' Society luncheon meetings.

The various activities which Dr. Downie had mentioned were all embraced in the *questionnaire*. He would not bore those present with the figures, but he could assure them that the scoring left him in no doubt whatever that, from the point of view of the student and recent graduate, the experiments had been worth while.

DR. V. M. COPPLESON said that all would agree that medical education, undergraduate education, showed a healthy spirit in Australia when steps such as Dr. Downie had described were being taken in Melbourne. Dr. Coppleson then introduced Dr. C. J. McCaffrey, of the Royal Newcastle Hospital, who had also been experimenting in the post-graduate field.

DR. C. J. MCCAFFREY said that he would outline briefly the resident training methods employed at the Royal Newcastle Hospital.

For very many years they had offered residents a longer training period than had been considered necessary in most hospitals. Five years earlier an overhaul of methods had seemed desirable. In doing this they had been guided by the recommendations in certain literature that had been mentioned earlier in the evening—the Goodenough Report, the British Medical Association's Report "Training of the Doctor", the "Intern and Resident Training Programmes" of the American Specialty Boards, and conditions for specialist training recommended by the Goodenough Report, the Royal College of Physicians, and recently by the Royal College of Surgeons.

It had been decided to adopt the recommendations of the British Medical Association for what it called intern training—the pre-registration year. They agreed with the British Medical Association that in approaching the problem of recent graduates it was most necessary that their education should be concerned primarily with the patient as an individual, the patient and his illness, rather than with a consideration of disease alone.

In planning the first year of training they tended to limit the work in quantity, and their approach to training showed considerable changes from their previous methods.

In the graduate's first year they rotated him through six groups—medicine, surgery, obstetrics and gynæcology, anæsthesia, casualty and pathology. At all times he was regarded as a student rather than as a worker. As a factor in production he was a liability; he cost more than was received from him. That, Dr. McCaffrey thought, was the price which had to be paid. During his term in those groups which were mainly technical, the graduate's training was strictly on the educational level. He was not responsible to and was not taught by senior "residents". His education was in the hands of a specialist or registrar and it was tutorial.

In the purely clinical subjects—medicine, surgery, obstetrics and gynæcology—it was very necessary that he should know the patient in his environment and that he should see the patient and his disease rather than the disease alone.

In these groups he was required to work closely with the almoner department. He visited the patient's home to see for himself the environment in which the patient lived. He was required to participate closely in the arrangements for the patient's disposal after treatment and to follow with the almoners as far as was possible the methods used.

The amount of work he was required to do was limited, but it was essential that he should conduct the necessary investigations in the most comprehensive manner. This, of course, did not mean merely clinical investigation. He attended all follow-up clinics.

Every "resident" whose work was satisfactory was offered an opportunity of a further two years' training.

With some modifications he rotated through the same groups. The length of time spent in anæsthesia and pathology was more limited and, particularly in anæsthesia, was spread over a longer period. The time spent in medicine and surgery was increased. He was given more responsibility and more work to do, and was allowed to act more on his own initiative.

During those two years he served on the "special" groups—those of ear, nose and throat and eye, and urology. The medical terms, both junior and senior, took in pædiatrics.

The Royal Newcastle Hospital resident training period thus covered three years. One year was what British or Americans would call an internship period, the second two years would also be an internship in the United States, but were classed as a residency by the British.

In Newcastle they held the view held by the British and Americans that the basic training of a doctor should be much the same whether he proposed to undertake specialist practice or general practice. The training which he received was equally necessary whether he intended to be a general practitioner or a specialist. It was thought that the training given him in those three years fitted him to undertake general practice. Those wishing to proceed to a specialty served a further three years as registrars and played a part in resident training as well as furthering their own chosen specialty.

More recently the training scheme had been modified and it was proposed that during his second two years the graduate should actually spend a part of the time working in a general practice. At all times they felt that the position of a "resident" as a student rather than an employee should be kept in the forefront.

If that type of training was adopted it was necessary to review the medical organization which had been accepted in Australia as sufficient or necessary for resident training. Dr. McCaffrey said that he could not emphasize that too much. Descriptions of the necessary organization were set down in both the Goodenough Report and the "Training of a Doctor". It was expressed more strongly by the Americans in their views on specialist training, and anyone who was interested might find a clear statement of those views in "The Hospital in Contemporary Society", by the medical staff of the Massachusetts General Hospital. The foregoing views on post-graduate medical education and the medical organization necessary to conduct it had been nowhere more clearly set down than by V. M. Coppleson in his recent "Trends in Modern Medical Education".

In Newcastle they had set up a medical teaching and administrative organization for this purpose along the lines laid down by the authorities mentioned. If those views on training were adopted, the educational programme would have to be carefully worked out.

Since the new plan at Newcastle had been in operation reports were sought from the "residents" at the end of their first year and again at the end of their three years. The reports were anonymous. They were reviewed by those concerned with training and the ideas of the "residents" themselves and those responsible for teaching were jointly discussed. From time to time it had been necessary to make modifications; these had been surprisingly minor.

They believed that what they had started was a satisfactory system and they hoped to continue it.

DR. V. M. COPPLESON said that they had dealt with the subject from the point of view of the objectives and methods. He called on Dr. Rawle to deal with the matter more or less on the critical level.

### A Critical Approach.

DR. K. C. RAWLE said that he felt that he was in rather an invidious position. The two previous speakers had spoken of some original research that they were carrying out, work which was of practical importance, and it would have to be very seriously observed and considered by all educational authorities. It was work in the first class of the experimental field.

However, he had been asked to refer to work from the general practitioners' level. Having graduated twenty-eight years previously, he was out of touch with the details of the present medical curriculum. However, as a country practitioner he did have contact with the finished products of the medical training organization, and could perhaps thus assess, in some degree, the efficiency of that organization in regard to present-day medical practice.

His remarks should be taken as general and, of course, entirely subject to the varying personalities of the people to whom he was referring. He spoke of the average standard of the practitioners who had at various times come to his knowledge as assistants and as locums and as intern "residents" at the local hospital. He thought that in general the man who had done one year at a teaching hospital was practically useless to the general practitioner for some months—much the same as Dr. McCaffrey said: they were a liability. With one year at a teaching hospital and perhaps even longer at some of the smaller non-teaching hospitals, a man was not capable of handling the patients. On what did Dr. Rawle assess that? He would assess it on the ability of the patient to accept that doctor as being capable of handling his private affairs and his medical treatment, and the man who had done one year was usually not accepted by the people. That would be Dr. Rawle's yardstick. Patients came in afterwards and said: "I do not want that young fellow; he does not know what he is doing." What had happened was that he had failed to impress those patients with the fact that he was treating individuals. At that stage he was still treating diseases.

Dr. Rawle then discussed the second-year man, the man who had done two years' work at a teaching hospital. This man was really worth while. He could handle patients and satisfy them. They came back asking for the young doctor; they liked to see him because he had shown an interest in their personality as well as their disease, and that man was of some use to the general practitioner as an assistant or as a *locum tenens*. However, his knowledge of obstetrics was nil or practically nil, because in the two years he had been at the teaching hospital (with one or two notable exceptions) he would learn nothing of obstetrics and he was not of much use in the middle of the night. His knowledge of pædiatrics was much in the same position.

How did the graduate secure his training for general practice in that particular line? Most of the men would spend one year or a second year at a general teaching hospital if they were able to; they would spend six months or so at a children's hospital and then put their names on the waiting list for the obstetric hospital; then finally they might make a journey overseas and then come back and perhaps feel confident to commence in practice as an assistant to a more senior man.

That was roughly what Dr. McCaffrey was using in his system, doing it all in the one spot; he was doing the work with the type of men who had had to fend for themselves in the past. That was the system recommended in England; that was what was involved in the British recommendations.

Dr. Rawle accepted the general principle that a university should not turn out a fully qualified and capable general practitioner; it should not attempt to do so, and it did not

do so. It should train the students in general basic principles; in other words, it should maintain its educational outlook.

The intern year following graduation, now compulsory in the United States of America and Canada and England, and actually on the statute books in New South Wales, but held in abeyance by edict from the Government, should also be included in the educational phase and as such should be regarded as part of the medical course and be to a great degree under definite university or equivalent control.

If such a year was to be made compulsory by law it would be necessary to control that year and to make it adequate. The man should do a certain amount of work and not be allowed to drift along in his own way in perhaps a very second-rate hospital.

Dr. Rawle then referred to the hospitals. He said that Dr. Coppleson's article referred to 67 hospitals which accepted interns. Of those, he stated that not more than 20 would qualify according to the standards laid down by the American Medical Association as suitable hospitals for interns. The other 47 were below the standard. Into those 47 would go men who were not the top men of the year; they would obviously not be the ones who passed into specialist practice later. Those allotted to the better hospitals would be the men who, going through the first year and second year and on to registrars' jobs, would eventually provide the junior honorary medical officers for the teaching hospitals.

That intern year should be controlled and organized, and someone should take charge of it, and as a general practitioner in the country he thought that that was one of the major points which could be dealt with at once.

Dr. McCaffrey's scheme of three years was probably the ideal one, where the three years were fully controlled and the man was looked after and carefully handled throughout. A very urgent immediate problem was that the intern year should be made satisfactory.

Turning to the undergraduate level again, Dr. Rawle said that Dr. Downie's views accorded with some of his own. If, as so often had been said, general practice was a specialty in itself, in its own right, then surely as specialties were allotted so many lectures in the course, at the educational level, general practice should also be allotted so many lectures again at the educational rather than at the postgraduate level. That implied a lecturer specialist in that department, and that would entail one engaged in it and also teaching; such a person was not found very often, but of course could well be found.

In the report by the British Medical Association on general practice and the training of general practitioners, published in 1950 and referred to by Dr. Hunter, there had been published a synopsis of about five lectures given to the final-year students in one of the teaching hospitals, which Dr. Rawle would class as at the educational level. Such a practice did give the students at the university in question an opportunity of seeing a general practitioner at least five times during their medical course.

One other suggestion was that out-patient material would be needed for the training of students. Dr. Downie had probably thought of this and was probably doing it. One of the suggestions was that casualty departments might be turned into traumatic departments and the non-traumatic side could be dealt with in pre-specialist departments staffed by general practitioners who could give the students a general practitioner's viewpoint in their examination of the patients at that level. The patients could then be referred to the various specialist departments of the hospital. That would provide some material for the student's general practitioner training.

"Trainee assistantships" was another point which should be mentioned, as it concerned the general practitioner and was an essential part of the training. Dr. Rawle understood that in England graduates had to have six months' training work with a general practitioner before being registered under the National Health Service as a principal.

Dr. Rawle thought that under Australian conditions twelve months would be about the minimum that would be required to break in—if he might use that term—a man who had spent one or two years at a teaching hospital. With one year as a trainee assistant to break him in, he would pull his weight in a practice. His subsequent years in hospital, as suggested by Dr. McCaffrey, were an ideal for later training. Dr. Rawle declared that it was urgent that they should "fix" the intern year.

Some coordinating body had to take charge of that part of the general practitioner's education. The intern year should be spent under the Dean of the Faculty of Medicine at the University. He could delegate it to the Post-Graduate Committee in Medicine if so desired, or to someone such as a warden, as recommended by Dr. Coppleson, who could go around to the country hospitals and see that the interns were being given their specified training. Some standard had to be made and someone had to supervise it. Dr. Rawle did not know if that could be done, but he suggested that it was a very urgent problem and something which should be seriously considered without delay.

Medical practitioners in Australia were undoubtedly on a very high plane. Dr. Rawle remembered that in England he visited an Australian colleague. He had a roll-top desk and two chairs in his consulting room; there was no examining couch. That was not good enough and that was what was happening in 1930 in England. Dr. Rawle did not want that to happen in Australia. The colleague was an Australian-trained graduate. Australia could do better than that and it behoved Australians to see that the intern year was improved. Dr. Rawle suggested that as an immediate problem; perhaps Dr. McCaffrey's solution of his problem might be something to be considered by other hospitals. Whether or not it could be applied to a teaching hospital was a question which he left to those more expert in dealing with that particular problem.

### Questions.

DR. V. M. COPPLESON said that he would deal with the questions submitted. The first was to Dr. McCaffrey from Dr. T. M. Greenaway: "Your scheme is excellent; but it means money. How do you get away with it with the Hospitals Commission?"

DR. C. J. MCCAFFREY said that one was really going from the field of resident training into the field of hospital administration. Paradoxically, it did not cost more money. Dr. McCaffrey would undertake to prove that in a training scheme such as had been described the money saved on drugs alone would pay for the scheme. He had the figures for New South Wales hospitals and could give the cost per adjusted bed for drugs. He thought that he could prove that training as he had described it would save enough on drugs to pay for it.

DR. V. M. COPPLESON said that he had two more questions for Dr. McCaffrey: "What happens the first-year resident medical officers at Newcastle who fail to proceed to a senior resident medical officer appointment?" And the second question was: "How does Dr. McCaffrey arrange facilities for his interns to do their two months' private practice?"

DR. C. J. MCCAFFREY replied that residents who came to them had the system explained to them; they understood that it was not competitive, but that their right to proceed to a second two years depended entirely on the manner in which they behaved in the first year, and that depended on the reports of their seniors. So far they had not had anybody who had not come up to scratch; but it did not depend upon any vacancies. The rotating residency covered the second two years as well as the first, and they would only be passed out if their work was not satisfactory.

As to the second question, they had made an arrangement whereby they had an interest in a general practice and they sent second and third year "residents" who worked with the practitioner in that practice; they were not observers, they were part of the practice while they were working in it.

DR. V. M. COPPLESON said that the next question was: "Why has the State Act requiring medical graduates to do one year's residency in a hospital before registration not yet been proclaimed?"

DR. J. G. HUNTER, on being invited to reply, said that the proclamation had been deferred at the beginning of the war and that particular section of the Act had never been proclaimed since, for the reason that there were not sufficient hospital appointments in the early days for the numbers of students who were graduating, and reference had already been made that evening to the standards of some of the hospitals to which recent graduates had had to be sent. Dr. Hunter asked the audience to remember that in the pre-war days the number of hospitals available and the number of positions available at the teaching hospitals and the other hospitals, like the Balmain District Hospital and the Royal North Shore Hospital and Saint George Hospital, were in the neighbourhood of 120 or 130 beds, and over the last few years the number of beds had been well over 200. Indeed, the year before last they had had to place 289 graduates in hospitals; it meant that they had to use all the hospital facilities available in the State, and even then they had not been able to place every graduate.

The State would be in the position, if it proclaimed that particular section of the Act, of having to find a position for every graduate. It was for that reason that proclamation had been deferred. However, Dr. Hunter thought that as the number of graduates was decreasing it was quite likely that in the near future that section of the Act would be proclaimed.

DR. V. M. COPPLESON: The next and final question was one which he would ask Dr. Rawle to answer: "At present the best men at graduation become residents at teaching hospitals and are trained by consultants. The graduates of a lower standard become residents at district and country hospitals and are trained by general practitioners. Is this in the best interests of general practitioner training?"

DR. K. C. RAWLE said that at least it turned a good man into a better one. After all, he could see the point of view of the hospital. They took good men and they liked to train them, and sooner or later they would lead them through the registrarships at the hospital and eventually the men would make the new honorary staff of these particular hospitals. Dr. Rawle did not blame any hospital for looking after its own interests in that respect; that was in the interests of tutorial medicine and in the interests of general practice really. He did not think there was very much difference between the graduates. After all, they had all passed their final examination, even if some went to a country hospital and did not receive as good a training as those in the city hospitals. It was not a very easy question to answer. Dr. Rawle was afraid it did leave some out in the cold, but he thought that they would find that a lot of the men who did not get the general teaching hospital training would take a trip to England. For some reason or another it seemed to balance up and there was still a particularly good band of general practitioners in Australia in spite of all that had been said that night.

DR. V. M. COPPLESON said that there was one question which might have been asked. It was that of the young man having done one year as a resident medical officer who then wanted to have further training in obstetrics, particularly, and in pædiatrics. In New South Wales, for every vacancy in an obstetric hospital there were something like twenty or more applicants. It was a problem which worried a lot of young men.

## General Discussion.

The matter was to be thrown open for discussion, and Dr. Coppleson asked Professor Lambie to open this discussion.

PROFESSOR C. G. LAMBIE said that he had come to learn and not to speak. He was therefore surprised to be asked to open the discussion. The training of the general practitioner was primarily a question of post-graduate education, but Professor Lambie would confine his remarks to undergraduate medical education. Here he found himself in general agreement with the views of the British Medical Association report, and particularly with those of the Professor of Medicine in Liverpool University, Professor Sir Henry Cohen, with whom he had personally discussed the matter. He maintained that the function of a university was to provide the scientific and cultural basis of medicine, and only secondarily was it concerned with technical training. Their business was to bring the graduate to the point where he could choose his particular vocational sphere. They were not concerned with making anatomists nor with training people to become army surgeons, nor, for that matter, with how to run a public health office or a general practice. This principle held no matter what proportion of students might happen to be going into a particular sphere, whether that sphere was general practice or any other branch of medicine. They were also to some extent concerned with technical training. It was their job to ensure that graduates were able to look after human beings. The essential training of students should enable them to be safe practitioners, especially during the period when they were gaining further practical experience in the post-graduate years and during their internship. Professor Lambie quite agreed with Dr. Hunter when he said that it was high time that a post-graduate internship was made compulsory before final registration.

Those who looked askance at the academic character of the university training had to explain how it was that Australian practitioners were held in such high esteem by visitors from abroad. The training enabled graduates to acquire experience with the minimum of danger, and in the long run they tended to be better practitioners than if their medical education had been along purely technical or vocational lines. In regard to the attitude of the undergraduate towards this training, Professor Lambie had been very interested in Dr. Downie's remarks and he congratulated him upon his experiment. Of course, they were not yet in a position to judge whether those experiments would really raise the level of general practice; that remained to be seen. The opinions of students were not always to be taken very seriously, because students did not necessarily like what was good for them. Some students would always be found who wished to be a few jumps ahead of where they really were; when they were studying the preclinical subjects they wanted to be at clinical work, and when they were at clinical studies they would like to be doing the work of qualified practitioners. What medical students and medical educationalists had to learn was that everything came in good time. Professor Lambie had no quarrel with Dr. Downie when he said that some special training for general practice was desirable, but it was a question of when that training should be given—at the undergraduate stage or at the graduate stage. Professor Lambie thought that the period of internship and subsequent apprenticeship in general practice was the proper time for that to be given.

In regard to the Edinburgh experiment, he felt that he should refer to it, being an Edinburgh graduate himself. When he was at Edinburgh they had dispensary practice. The students were allotted to a dispensary and they had to go out to visit patients, diagnosing their conditions and treating them. If a student got into difficulties he could refer to one of the doctors attached to the dispensary. This gave the students some insight into what general practice was like. They saw disease in its natural environment; they had to prescribe treatment more or less on their own responsibility. In looking back on those years, Professor Lambie was bound to say that he thought he would have profited by experience of that kind much more if he had already become qualified and had had a year in hospital practice. The experiment which was being made at the present time did not provide quite the same experience as the dispensary practice, as it was known to students of a previous generation, because the days of the sick poor were over and the student did not go out on his own as he had once gone. Professor Crew had made use of these dispensaries in order that students might question patients and investigate their environmental conditions so as to answer such questions as: "What is the social background of the patient; why did he get this disease; what are his worries?" To Professor Lambie's mind it was deplorable that it should have been found expedient to separate this aspect of medicine as a specialty distinct from clinical medicine. In Sydney they approached the subject as an integral part of clinical medicine. Students were taught in their systematic course to regard the patient as a whole. Both in systematic and clinical teaching they laid due stress upon this and also upon the social and psychological aspects of medicine. In the Sydney school, social medicine was approached from two points of view. In clinical work it was dealt with from the point of view of the individual patient, and, attached to the Professorial Unit at the Royal Prince Alfred Hospital, they had an almoner from whom the students received instruction in social medicine. The students made domiciliary visits with her, or visits to the patient's place of employment and to various social institutions, such as old men's homes *et cetera*. They also took the social history under the almoner's supervision, incorporating it in their case record during their clinical clerkship. The approach to social medicine from the point of view of institutions and public organizations was made through the department of preventive medicine. In pædiatrics, under the supervision of Professor Lorimer Dods, there was a close link between the clinical and the public health aspects of social medicine.

There was a certain tendency in the profession at the moment which occasioned great concern, namely, the tendency for medicine to be split up into a number of narrow specialties—cardiology, gastro-enterology, neurology and so forth—and the general trend was for medicine to become disintegrated. But a physician was not a specialist, nor was one who confined himself to cardiology, neurology or any other branch of medicine entitled to be called a physician. A physician was one whose job was to define the clinical problem and to see and treat the patient as a whole. Specialists might be called in if necessary. That was what Professor Lambie, as professor of medicine, tried to teach. If the day ever came—and God forbid that it ever should—when medicine became split up into specialties, when the physician would disappear and when there were no longer professors of medicine to present medicine and the patient as a whole, then, and then only, would it be necessary to introduce general practice into the medical curriculum in order to restore the balance.

DR. V. M. COPPLESON said that this problem was a very live one, and one in which those present could see there were veritable giants on each side. Whilst he was in the United States of America he had discussed this matter with a number of men; one was George Baker Berry, who had introduced at Harvard the teaching of general practice in the undergraduate phase. On the other hand, one of the wisest men in the United States, Robert Loeb, said: "Students are able to go into patients' homes and learn about social conditions for the rest of their lives, but they have only one opportunity of learning the scientific basis of medicine." So before he called on other speakers Dr. Coppleson asked Dr. Downie to say a few words of reply to Professor Lambie.

DR. EWAN DOWNIE said that he did not wish to become involved in any argument, but he felt that perhaps he had not made himself entirely clear when he indicated the score to the questions which he had sent out. The *questionnaire* was concerned with only one year of students and six years of graduates. An analysis covered these as the students' section, the residents' section and the graduates' section. The score was so little out of proportion between the three groups that he did not think it was really necessary to separate the opinions of the students from those of the graduates.

He rather felt that Professor Lambie thought that he (Dr. Downie) had been unduly influenced by student opinion. He had been dean or sub-dean of his school for twenty years, and he thought that that should be sufficient answer.

DR. B. G. HAYNES first of all thanked the Post-Graduate Committee for inviting him to be present. It had been such a wonderful opportunity of hearing the subject thrashed out from its many aspects. The viewpoint of which he wanted to speak had been very ably discussed by previous speakers, and he wanted to endorse those points, namely, student apprenticeship. He thought that was a most important subject, and he was very much in Dr. Downie's camp in that and he felt that for once Melbourne had definitely got ahead of Sydney and he would be very happy to report back to his own hospital (Saint Vincent's Hospital) about this experiment going on in Melbourne, and recommend that it be looked into with a view to its adoption *in toto* or in part. Looking back as a Sydney graduate, the only failing, so far as he was concerned, in their course had been the lack of an opportunity of seeing patients in their homes in the student years. In a small way they had done it on their obstetric training and personally he had gained more from his visit to the home, where he carried out a confinement, than he gained from a lot of lectures.

There was one other point, namely, the question of teachers. Dr. Haynes had found that he was taught mainly by consultants who had not had any general practitioner background, who had not been in general practice, and on the whole he found that he did not learn as much from them as he did from other teachers who had been in general practice, and he agreed with Professor Lambie that it was a pity to see specialization going on within specialties within the body of medicine. It occurred to him that one of the factors producing this was the various post-graduate bodies, such as the colleges. They had to lay down definite periods as being necessary before the graduate could sit for the examinations of these bodies; all the examinations included some specialization and attendance in that specialty at one of the hospitals. He would like to see one of the conditions for a graduate to sit for one of these examinations that he had to have spent a certain period in general practice. That in itself would help to modify this rush into specialization within the specialties.

DR. W. BRODIE GRANT said that as a graduate of only eleven years' standing of the University of Sydney, and one of those who felt that possibly he would not have passed the finals if he had not graduated during the war, he could in retrospect heartily agree with Professor Lambie. He, for one, had felt ever since extremely grateful to his tutors of undergraduate days for the emphasis which they seemed to lay on general principles and for the emphasis, particularly, which they laid on the importance of considering a patient as a whole.

He was in a comparatively small rural area, where one became inevitably an integral part of the area, and he could not help feeling that that was a good thing. He was rather distressed by the fact that even in secondary education specialization seemed to begin unduly early. Even in his day it was as early as the second or third year that one was expected to have some idea of what one wanted to be, and consequently geography and so on, and the other natural subjects, were thrown overboard. He thought that now only was he becoming a useful citizen, and he believed that aspect of things was perhaps important. He might have become proficient technically a little bit earlier, but now, and only now, was he seeing patients as people in a community and people whose domestic life, social life and so on mattered with reference and with respect to their illnesses and their habits.

He had felt strongly that he as a graduate might benefit more from a medical course than he had done as an undergraduate, and he thought that Dr. McCaffrey's scheme, in which the young graduate was subject to the complexities of general practice, was better for the young undergraduate.

DR. B. A. COOK said that it had been a stimulating experience to hear the various views expressed, and he was inclined to agree with Dr. Rawle. The graduate product was a very knowledgeable fellow; in fact, he was so knowledgeable that one could not teach him anything. That was a fault of the system, because the emphasis was on academic and not on practical matters. Dr. Cook had been associating with young graduates for about thirty years, and he thought he knew something of their shortcomings and virtues; but he felt that, as Dr. Rawle had said, they were useless for the first six months. A good many were useless for two years. They had no concept of what an entity a patient was—a human being to the body and soul; they rather regarded him as a card index, a number, for which some treatment had to be prescribed.

Dr. Cook believed that when students graduated, or before they were registered, they would benefit by apprenticeship to a general practitioner, and he thought that the apprenticeship should last for six or twelve months.

DR. KEITH JONES said that there was no doubt about it that criticism was aimed at the moment at certain definite levels.

In the basic studies of medicine in the first three years Dr. Jones had felt for some time in his relations with students and young resident medical officers that the subjects taught had got out of proportion. He referred particularly to the pattern in the study of anatomy and neuroanatomy. In his opinion too much time was given to the latter and too little to the former. Too much attention was paid to the biochemical side and not sufficient to general physiological principles. Men proceeded to practise with insufficient knowledge of the general physiological principles and of anatomy. They could tell one a lot about the general arrangement and they could tell one a lot about neuroanatomy. At the clinical level the hospital staffs were doing a good job; their job was to teach a man surgery and so on, and the man arrived as a resident medical officer with a fair amount of knowledge but little actual practice.

It was at the resident medical officer level that there was most criticism at the present time. In most teaching hospitals it was an undoubted fact that a man was forced to decide when he was training for a specialty, whether he had really made up his mind or not, and furthermore, if a man did not obtain a post at a teaching hospital he was immediately barred from any prospects of obtaining a specialty; he was barred by the very condition laid down by the various colleges and post-graduate bodies. Among their conditions was the important factor that he should have spent so much time as a senior "resident" in an approved hospital. That removed incentive.

The country hospitals were more fitted to train men for general practice than the teaching hospitals. Dr. Jones found that men coming to train in practice, who had trained at a non-teaching hospital, had far more facility in the actual carrying out of the necessary measures in practice; they were very much more efficient and self-reliant. That was because in the teaching hospitals they had no chance of doing anything while being taught at the tutorial level. If men were taught at the tutorial level and after twelve months went into practice, then they had not the necessary knowledge.

Dr. Hunter had referred to the fact that Professor Dunlop had been very complimentary about the standard of the Australian general practitioner. He had seen the men who had been trained some years previously and to whom restrictions were not so rigidly applied. At the Royal Prince Alfred Hospital he had carried out medical measures and now he knew students did not; they gave very few anæsthetics, they might not apply a plaster, and they were extremely lucky if they dealt with a fracture. An overhaul was necessary at the level of the first-year "resident".

Lowering of standards would eventually lead to two classes, the highly trained specialist class and the poorly trained general practitioner class, and that had come about in many countries of the world.

Dr. Hunter had also raised the question of the percentage of specialists and general practitioners in the community. In the United States of America, where probably specialty first became superspecialty, the percentage of specialists was rising and the percentage of general practitioners was falling; the figures he had read showed 40% or 45% of men in the United States of America at present were labelled as specialists. In a country like Australia that should not apply, although the figures were also rising in the Commonwealth. It was up to them as a result of the conference that night to report measures to which the various bodies could pay notice and bring about the desired result.

DR. M. C. MCKINNON thought that the problem boiled down very largely to the putting of responsibility on to the student or the "resident". There was only one thing which had been responsible for the high esteem in which the general

practitioner in Australia was held; it was because he accepted responsibility and carried the job through properly.

He thought that there was a mistake in the type of general practice which they could give their "residents" at Newcastle; they were taught that they had a team of specialists in the Newcastle Hospital which might be called upon in cases that required operation and so on; those patients had to be referred to the specialists. Dr. McKinnon thought that the general practitioner should be encouraged to do operations, and he was then a better general practitioner, even if he was not a better specialist. He could not recall a patient with intussusception or pyloric stenosis who had died amongst his friends, but he had seen patients die in the hands of specialists to whom patients were referred too late by general practitioners who did not operate.

He thought general practitioners should be given as much responsibility as possible and pushed out to somewhere where they were by themselves. For an assistant to have another practitioner to fall back on was no real training to the acceptance of responsibilities.

It was very rude to mention names and speak of his own experiences like that, but he felt quite strongly that the "residents" should not be spoon-fed to such an extent that they thought that general practitioners could not operate and only specialists could.

DR. W. A. CONOLLY said that two of the members of the panel were members of the College of General Practitioners, and he wished to extend an invitation to Dr. Downie and Dr. McCaffrey to be honorary, if not foundation, members, because what they had said was very practical.

He did not want to reiterate all that had been said, but he thought that Professor Lambie had been rather objective. He agreed with Professor Lambie that it was very necessary that a sound academic training should be given to all medical students, but he thought that sufficient emphasis was not placed on the practical side.

One of the objects of the College of General Practitioners was to see that something was done not only at the undergraduate stage, but at the early post-graduate stage to bring these facts about.

Something had been mentioned by Dr. Hunter about the report from England, but perhaps none of those present had read the report in the *British Medical Journal* on the teaching of general practice to general practitioners. They felt that some general practitioners should teach undergraduates. It had been the practice of many years earlier that all teachers were those who had been in general practice before they specialized. The practice now was for highly specialized members not to do any general practice at all and for them to tell students how to attend to patients. They could not teach students when they could not give sufficient emphasis to the treatment of the patient at home. It was a different thing to treat a patient in a public hospital from treating a patient in the home, because the tendency in the hospital was to say: "We will have an X-ray examination or a blood count"; but one of these days some of the poorly educated undergraduates would go to the bush because they felt there was no room for them in the city to practise, and they would be left to their own resources. It was very necessary to emphasize some of the more practical points in regard to the teaching of graduates and undergraduates in general practice. He wished to say in conclusion that when a student was taught by a highly trained specialist who had no knowledge of general practice he was very much more handicapped; and it was necessary for a man who was going to specialize to have some knowledge of general practice.

DR. V. M. COPPLESON asked members of the panel to reply to some of the statements which had been made.

DR. C. J. MCCAFFREY said that he had little more to say. He wished to make two points. Dr. Jones had referred to men in their first year being taught on the tutorial level and not being given practical experience. On the contrary, that was the whole basis of the Newcastle approach to tutorial education in the first year. The tutor was not going to do all the work, but he saw that the first year intern and the second and third year "residents" had a sufficiently wide range of work allotted to them, that they did it themselves, and that they were taught to do it well. That was the whole basis of the Newcastle approach. The "residents" were students and people were provided to teach them. In answer to Dr. McKinnon, he said that the "residents" received very sound practical training. Dr. McKinnon was one of their ex-residents, and Dr. McCaffrey knew something of the training he had received a quarter of a century before. He would say that the "resident" of the present day received more practical training under better supervision than he (Dr. McCaffrey) had received in his day. The essential difference lay in the type of training that he received—the supervision.

DR. J. G. HUNTER said that he was reminded very much of the remarks made by Dr. Raymond Whitehead, who was one of the reporters at the World Conference of Medical Education, when discussing what was required of the medical student, because his remarks applied very aptly to what had been said that night about the recent graduate. His remarks were as follows:

> My final point is that medical students (although they do not think so) are, of necessity, young and immature, lacking the great experiences of adult life. These experiences, both sweet and bitter, are what make both a good man and a good doctor; they round off the sharp edges of learning. We teachers have had such experiences. In every dean's office I should like to see in letters of gold these following words of a great Frenchman, Maurice Chevalier: "At our age we must be reasonable."

DR. K. C. RAWLE said that perhaps several criticisms had been made which were really quite unjust. To criticize a second-year graduate too severely was quite wrong. After all, if they criticized an eye surgeon after two years from graduation for something he could not do, they would be unjust. They should not criticize the junior after two years. The time to criticize was after he had been through a thorough training, which Dr. McCaffrey proposed to give, which was a course consisting of three full years. Then perhaps some criticism might be levelled at his immaturity and inexperience.

Dr. Jones had suggested that more should be taught on the vocational side in his year as an intern. Dr. Rawle disagreed with that. He thought that year was educational. That year was for consolidation of the material he was taught at the university which was not vocational, although he had to do some vocational work. The present practical training of general practitioners was a very skimpy, immature affair. Graduates ought to have more and better training and become balanced up on general work, orthopædics, gynæcology, obstetrics and children's work, and so on, so that at the end of three years they could be turned out well trained. At the present time the men turned out were not fit for independent general practice, and it was not the house surgeon's fault, but the fault of those who expected a man to be all right after a year of training. He should be expected to be all right only after three years of training, and it was up to the present organization to find some way of initiating some system which would work and which would have to be, at least, a three-year system.

DR. EWAN DOWNIE said that he welcomed the opportunity to say "thank you" for an experience which he would not soon forget. He congratulated the Chairman and his committee upon the very stimulating and provocative evening which had produced a wealth of ideas. They would sediment and crystallize into something which they all hoped would achieve the purpose of improving the standard of general practice.

In another place some few months previously he had had occasion to remark that they were inclined in Australia to rely too much upon opinions from abroad. They took the written word from abroad on experiences particular to one country and sought to apply it to Australian problems without any attempt at investigation, as had been done that evening.

As a result of those reflections he had made a proposition which he felt at the time was overdue, namely, to think seriously about setting up an Australian Goodenough Committee to consider Australian problems and to make recommendations. The conditions of general practice and other sections of practice were so dissimilar to those in other parts of the world that he thought it would pay dividends to examine Australian conditions a little more closely.

Finally, they had heard various laudatory remarks about general practice, and Dr. Downie believed that the standard of general practice in the Commonwealth was high. A significant reason for this was the presence of so many interested members of the profession at the gathering that night, bound by the traditions of the past and debating the means to raise standards higher.

DR. V. M. COPPLESON, on behalf of the Post-Graduate Committee in Medicine, thanked the various speakers who had taken part in the panel discussion, and particularly Dr. Downie, who had come from Melbourne, and whose presence all would agree had been most stimulating.

It had been proposed to ask for motions, but Dr. Coppleson thought that the meeting was not of the kind from which motions could come very easily, and for that reason he had

not gone on with that particular aspect of the programme. He thought, however, that the discussion would sow seeds in the minds of many who were in a position to act on some of the suggestions which had been made. The views expressed by Dr. Downie would provide much food for thought to those interested in the undergraduates' course, and Dr. Coppleson was sure that many hospitals, particularly the non-teaching hospitals, would be particularly interested in the Newcastle experiment.

At the request of the Chairman of the Post-Graduate Committee he closed the meeting.

# British Medical Association News.

## VICTORIAN BRANCH NEWS.

A MEETING of the Section of Medical History of the Victorian Branch of the British Medical Association was held at the Medical Society Hall, 426 Albert Street, East Melbourne, on Monday, June 7, 1954, Dr. H. Boyd Graham in the chair. Dr. D. Roseby read a paper entitled "Past Relationships between the Doctors and the Friendly Societies". Referring chiefly to Victoria, Dr. Roseby discussed the major changes which occurred in the period 1908-1921. The complete paper, together with the discussion which followed, is preserved in the minutes of the Section.

# Out of the Past.

*In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.*

## WOUNDING OF GOVERNOR PHILLIP BY A NATIVE.[1]

September, 1790.

MATTERS had proceeded in this friendly train for more than half an hour when a native with a spear in his hand came forward and stopped at the distance of between twenty and thirty yards from the place where the governor, Mr. Collins, Lieutenant Waterhouse and a seaman stood. His Excellency held out his hand and called to him, advancing towards him at the same time, Mr. Collins following close behind. He appeared to be a man of middle age, short of stature, sturdy and well set, seemingly a stranger. The nearer the governor approached the greater became the terror and agitation of the Indian. To remove his fear Governor Phillip threw down a dirk, which he wore at his side.[2] The other, alarmed at the rattle of the dirk and probably misconstruing the action, instantly fixed his lance in his throwing stick. To retreat His Excellency thought would be more dangerous than to advance. He therefore cried out to the man Weè-ree, Weè-ree (bad: you are doing wrong), displaying at the same time every token of amity and confidence. The words had, however, hardly gone forth, when the Indian, stepping back with one foot, aimed his lance with such force and dexterity, that striking the Governor's right shoulder, just above the collar bone, the point glancing downward, came out of his back, having made a wound of many inches long. The man was observed to keep his eye steadily fixed on the lance until it struck its object, when he directly dashed into the woods and was seen no more. Instant confusion on both sides took place: and several spears were thrown from different quarters, though without effect. Our party retreated as fast as they could, calling to those who were left in the boat to hasten up with firearms. A situation more distressing than that of the governor during the time that this lasted cannot readily be conceived—the pole of the spear, not less than ten feet in length, sticking out before him, and impeding his flight, the butt frequently striking the ground and lacerating the wound. In vain did Mr. Waterhouse try to break it: and the part which appeared on the other side forbade extraction until that could be performed. At length it was broken and His Excellency reached the boat, by which time the seamen with the musquets had got up and were endeavouring to fire them, but only one would go off, and there is no room to believe that it was attended with any execution.

When the governor got home the wound was examined: it had bled a good deal in the boat and it was doubtful whether the subclavian artery might not be divided. On moving the spear, it was found, however, that it might be safely extracted, which was accordingly performed.

[1] From "A Complete Account of the Settlement at Port Jackson", by Watkin Tench (1791). From the original in the Mitchell Library, Sydney.

[2] Phillip sought every opportunity to establish friendly relations with the natives in the neighbourhood of Sydney Cove, particularly in order to put an end to the not infrequent murders of convicts by them. The incident described here occurred at Manly Beach, where he encountered a large gathering of them feasting on a very decomposed whale which had become stranded.

# Correspondence.

## SUICIDES IN TASMANIA.

SIR: Dr. Duncan's interesting article on suicides in Tasmania (M. J. AUSTRALIA, July 31, 1954) proves once again that suicide follows a standardized pattern in civilized countries. Its incidence amongst men increasing with advancing years, it reaches its peak amongst women in middle life; it is highest in the spring, and so on.

No matter how one studies the subject, one is eventually forced to acknowledge that a person suicides because his fear of life is greater than his fear of death. If there is no fear of a life after death, there can be little fear of death itself. Shakespeare, with penetrating insight, analysed this position better than anyone else has ever done in Hamlet's soliloquy. This explains why strictly orthodox Jews and Roman Catholics, whose religions forbid suicide, seldom take their lives.

There is a standardization also of the history of suicide in various ancient civilizations. In the period of growth of ancient Greece and Rome, the lives of men and women were governed by the wishes of the gods, and the needs of their country. Suicide was forbidden by law, and was rare. Thereby man acknowledged that his own wishes were secondary to those of the gods and his rulers.

When, however, the civilizations became wealthy, religion became "superstitious nonsense" and patriotism "the refuge of fools". Then arose philosophers (such as Zeno in Greece, and Seneca in Rome) who preached that a man's life belonged to himself to do as he liked with it. Suicide then became a major and alarming problem. The end of civilization was then in sight.

Today history is repeating itself. Many men, including medical practitioners, freely advocate suicide and euthanasia. Their arguments are plausible and convincing. They but resurrect a doctrine that was followed by the most disastrous national consequences in previous civilizations. For the fact remains that a normal man, bereft of the consolations of religion and patriotism, turns to suicide as the easiest solution of his difficulties, and psychoanalysis and psychiatry can do but little to save him.

Yours, etc.,

S. J. MINOGUE.

195 Macquarie Street,
Sydney,
August 3, 1954.

## THE TRAINING OF MEDICAL STUDENTS.

SIR: There have been a number of letters in the journal recently regarding the training of medical students. As a member of the proposed College of General Practitioners Undergraduate Training Committee, they have been of great interest.

All matters pertaining to this are obviously in the hands of the Faculty of Medicine. The Dean, who has been most kind and helpful, has pointed out that the curriculum is so very full that there is little room for addition. The student has so much to cope with academically that he has little time to get any early training in the practical side of his profession. He must of necessity imbibe as much theoretical learning as possible to gain a degree and then start about the business of really learning to be a doctor.

Dr. Hughes's letter lamented the fact that early graduates had little knowledge of the most elementary practical everyday procedures. Much of this could be learned by students

attending the casualty wards of the large hospitals, but since this will not help them to pass examinations, the opportunity is passed by. We hope to help them to some extent and have formulated plans which have been placed before the Dean and Faculty. They must of necessity be extracurricular, and any facilities we can give them will be availed of in vacations and week-ends and any few spare hours they may have.

We have contacted the District Nursing Association, the Methodist Aged People's Nursing Service and the Brown Sisters of Coogee, asking that students be allowed to accompany their nurses on their rounds, to watch the carrying out of normal nursing procedures, dressings, enemas and injections, in poor homes with few facilities. Familiarity with these procedures will enable them to give explicit instructions to their patients in days to come when they cannot secure hospital beds. It is hoped that students will be able to attend at smaller suburban hospitals in week-ends to get a more intimate picture of casualty and out-patient work with the resident medical officers.

Lastly we are securing enough general practitioners to have the students with them in week-ends to observe the running of a normal general practice and all that it entails in organization and regulations, but above all in the many real services that can be rendered to the general public, in medical, social and preventive therapy. It is hoped thereby to inculcate in him, surrounded as he is by the specialist and superspecialist, the knowledge that the greater part of medical work is done by the well-trained all-round general practitioner, who copes with smaller but very real problems of his patients twenty-four hours a day.

We hope, with the help of the Dean and the Faculty, slowly to achieve our aims. We believe that they have a very definite interest in them, but the very congestion of the curriculum makes it slow work. Lectures granted to us later in the year will help to start the process.

The teaching hospitals have been contacted to ascertain their views, and they have expressed much interest in the development of the sound all-round practitioner. One eminent consultant and teacher stated that he considered venereology to be extinct almost, as a teaching subject, owing to the antibiotics, and stated that he would recommend to the Faculty that general practice should be substituted as a subject. Naturally we would be delighted.

Yours, etc.,

Hornsby,
New South Wales,
August 3, 1954.

T. E. Y. HOLCOMBE.

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SIR: I previously criticized the training of medical students, because of the apparent lack of experience shown by young graduates in practical work. I would now suggest that personnel other than medical specialist teachers, whose time is necessarily limited, be recruited to teach students. For instance, tutor sisters could be appointed to train them in such matters as administering hypodermic injections, giving enemas, passing catheters, applying dressings, removing sutures and so forth. They could also demonstrate how to posture patients in bed, apply strapping and other special dressings, such as Unna's paste bandages. A recent graduate told me that he had no idea how to pass a catheter.

Theatre dressers or nurses would be able to show instruments used in ordinary operations. In the country a young doctor may have to supervise the setting up of a tray for an appendicectomy or the curettage of the uterus very early in his career. Attendances at such demonstrations ought to be compulsory and oral examinations conducted on the work done. In some hospitals nursing demonstrations are given, but are poorly attended because no examinations are held on practical procedures.

Also it would be an advantage if general practitioners were appointed to the teaching staffs of hospitals (and paid). Their part would be to discuss the right approach to the patient in the home and consulting room, and show the way to examine patients in the home, especially where women and children are concerned. Students need to be taught professional manners, by which I mean the consideration of a patient's feelings and susceptibilities. It is not good manners to say to a woman, "Pull up your nighty, and let's have a squint at your belly", be she ever so humble. "Manners makyth Man", truly says the old Winchester motto. General practitioners could also teach the simple methods of anæsthesia and the treatment of minor ailments and infectious diseases, which are not seen in the wards of general hospitals.

Dr. F. W. Wilkinson, an excellent clinician, taught us over thirty years ago to first look at a patient, then talk with him, and lastly examine him. Above all, general practitioners could emphasize the necessity for realizing that people have minds as well as bodies, and the necessity for the early detection of signs and symptoms that may lead to a mental breakdown. Many people come to our surgeries who have no detectable physical disease, but they are indeed sick folk, and sorely in need of the counsel and treatment of a wise physician.

I hope that these suggestions may be deemed worthy of consideration, so that our young people may be equipped practically as well as theoretically to engage in the practice of medicine.

Yours, etc.,

Armidale,
New South Wales,
August 2, 1954.

ELLEN M. KENT HUGHES.

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# Post-Graduate Work.

## NUFFIELD FOUNDATION DOMINION TRAVELLING FELLOWSHIPS.

THE Nuffield Foundation will continue in 1955 its scheme of offering a number of travelling Fellowships to Australian graduates. Seven awards will be available, including two Fellowships in medicine, two in the natural sciences, one in the humanities and one in the social sciences. The purpose of the Fellowships is to enable Australian graduates of outstanding ability to gain experience and training in the United Kingdom in their chosen fields, and to make contact there with scholars working in those fields, with a view to the Fellows' equipping themselves to take up senior posts in research and teaching in Australia.

The Fellowships are intended for men or women of first-rate intellectual and personal qualities, who have already shown unusual capacity to advance knowledge and teaching in one of the fields concerned. The Foundation wishes the awards to be open on as wide a basis as possible, and applications from persons with degrees in such fields as dentistry, veterinary science, engineering, architecture *et cetera*, as well as those in the fields already mentioned, will be welcome. Candidates must be Australian nationals, normally between the ages of twenty-five and thirty-five years, and must be university graduates holding, preferably, a master's or doctor's degree, and having subsequently had a year or more of teaching or research experience on the staff of a university or comparable institution.

A Fellowship will normally be tenable for one year, but in exceptional cases may be extended for a further period of a few months. The Fellowship will provide for return travelling expenses of a Fellow between his home residence and the United Kingdom, and, if he is married, similar expenses for his wife. An adequate allowance will be made for the Fellow's living and travelling expenses in the United Kingdom and for his academic fees, books and other incidental expenses, as well as a personal allowance. The total value of an award, including all travelling expenses, varies with the needs and family responsibilities of the holder, but will in no case be less than £900.

A Fellow will be expected to resume residence in Australia on the completion of the Fellowship. Except with the express permission of the Trustees of the Foundation, a Fellow may not hold any other award concurrently with the Fellowship. A Fellow will be required to carry out, at centres approved by the Trustees of the Foundation, a programme of research work and training, similarly approved. Other work, paid or unpaid, may not be undertaken without the permission of the Trustees. During the tenure of the Fellowship a Fellow will not normally be permitted to prepare specifically for, or to take, examinations for higher degrees or diplomas awarded by bodies in the United Kingdom. A Fellow will be required to submit to the Trustees, at the end of the Fellowship, a report on his work during the Fellowship. Should the Trustees at any time find that a Fellow neglects or has neglected the obligations of the appointment, they shall have power immediately to terminate the Fellowship.

The Fellowships will be awarded by the Trustees of the Foundation on the recommendation of its Advisory Committee in Australia. Applications for Fellowships to begin in 1955 should be submitted not later than November 1, 1954, to The Secretary, The Nuffield Foundation Australian

Advisory Committee, c.o. The Australian National University, Canberra, A.C.T., from whom copies of the application form may be obtained.

# Medical Research.

## RESEARCH FELLOWSHIPS OF THE INTERNATIONAL CHILDREN'S CENTRE.

A NUMBER of Fellowships for the academic year 1954-1955 will be available for research workers who may wish to work at the laboratories of the International Children's Centre, Paris. At present the programme of research of the Centre is essentially connected with problems of antituberculosis vaccination and antipertussis immunization. The grants amount to 60,000 French francs per month. Travelling expenses from their residence to Paris will have to be borne by the research Fellows.

Research workers who wish to apply for a Fellowship are requested to send their application together with their *curriculum vitæ*, record of previous work and testimonials of their chiefs of service to Professor Bugnard, International Children's Centre, Château de Longchamp, Paris 16°.

## EXPERIMENTAL RESEARCH INTO THE PROBLEMS OF AGING.

THE Trustees of the Ciba Foundation for the Promotion of International Cooperation in Medical and Chemical Research, 41 Portland Place, London, W.1, wishing to encourage well-conceived research relevant to basic problems of aging, invite candidates to submit work in the field for awards for 1954-1955. Details of the conditions may be obtained on application to Dr. G. E. W. Wolstenholme, Director and Secretary to the Executive Council, but in general candidates should note the following points: (*a*) Five awards, of an average value of £300 each, are available for the period 1954-1955. The announcement of awards will be made in July, 1955. (*b*) Entries must be received not later than February 28, 1955. (*c*) Entries will be judged by an independent international panel of distinguished scientists, who will advise the Executive Council of the Foundation on their findings and will also have power to recommend variation in the size and number of the awards according to the standard of entries. The decisions of the Executive Council will be final. (*d*) In making the awards preference will be given to younger workers. (*e*) The work submitted should be unpublished (but may be under consideration for publication) at the closing date for entries. (*f*) The papers may be in the candidate's own language, but a summary in English not exceeding 500 words must be attached. (*g*) Where there is one or more co-authors, the name of the leading author should be indicated; it is to him that the award will normally be made, and it will be left to his discretion to share this award appropriately with his co-authors.

## FEDERAL COUNCIL MEDICAL MONOGRAPH FUND.

THE following donations have been received for the Federal Council Medical Monograph Fund.

£262 10s.: Australasian Medical Publishing Company, Limited.

£250: New South Wales Branch, British Medical Association.

£105: Federal Council of the British Medical Association in Australia.

£100: British Medical Insurance Company of Victoria, Dr. A. E. Rowden White.

£50 1s. 3d.: Queensland Branch, British Medical Association.

£50: Burroughs Wellcome and Company (Australia), Limited, *Elliotts and Australian Drug Proprietary, Limited, South* Australian Branch, British Medical Association.

## DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK *ENDED JULY 31, 1954*.[1]

| Disease. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Northern Territory. | Australian Capital Territory. | *Australia.* |
|---|---|---|---|---|---|---|---|---|---|
| Acute Rheumatism | 4(3) | .. | 4(1) | .. | .. | .. | .. | .. | 8 |
| *Amœbiasis* | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Ancylostomiasis | .. | .. | 1 | .. | .. | .. | 2 | .. | 3 |
| Anthrax | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Bilharziasis | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| *Brucellosis* | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cholera | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Chorea (St. Vitus) | 1 | .. | .. | .. | .. | .. | .. | .. | 1 |
| Dengue | .. | .. | .. | .. | 1 | .. | .. | .. | 1 |
| *Diarrhœa (Infantile)* | 2(2) | 12(12) | 4(3) | .. | 5(4) | .. | 2 | .. | 25 |
| Diphtheria | 4(3) | 2(2) | 3(2) | .. | 4(3) | .. | .. | .. | 13 |
| Dysentery (Bacillary) | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| *Encephalitis* | .. | .. | .. | 1 | .. | .. | .. | .. | 1 |
| Filariasis | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Homologous Serum Jaundice | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Hydatid | 1 | .. | .. | .. | .. | .. | .. | .. | 1 |
| *Infective Hepatitis* | 17(3) | 27(13) | .. | .. | 3(2) | .. | .. | .. | 47 |
| Lead Poisoning | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Leprosy | .. | .. | 1 | .. | 1(1) | .. | 1 | .. | 3 |
| Leptospirosis | .. | .. | 1 | .. | .. | .. | .. | .. | 1 |
| Malaria | 1(1) | 1 | .. | .. | 1 | .. | .. | .. | 3 |
| Meningococcal Infection | 7(5) | 6(4) | 1 | .. | .. | 1(1) | .. | 1 | 16 |
| Ophthalmia | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| *Ornithosis* | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Paratyphoid | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Plague | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Poliomyelitis | 8(4) | 14(11) | 1 | 5(3) | 2(2) | .. | .. | .. | 30 |
| *Puerperal Fever* | .. | .. | 1(1) | .. | .. | .. | .. | .. | 1 |
| Rubella | .. | 6(4) | .. | .. | 10(9) | .. | .. | .. | 16 |
| Salmonella Infection | .. | .. | .. | .. | 1(1) | .. | .. | .. | 1 |
| Scarlet Fever | 23(13) | 24(16) | 13(10) | 6(5) | 1(1) | .. | .. | 1 | 68 |
| Smallpox | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Tetanus | .. | .. | 1 | .. | .. | .. | .. | .. | 1 |
| Trachoma | .. | .. | .. | .. | 364 | .. | 60 | .. | 424 |
| *Trichinosis* | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Tuberculosis | 33(26) | 15(11) | 8(2) | 9(6) | 10(5) | 1(1) | 2 | .. | 78 |
| Typhoid Fever | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Typhus (Flea-, Mite- and Tick-borne) | .. | .. | .. | .. | 1(1) | .. | .. | .. | 1 |
| Typhus (Louse-borne) | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Yellow Fever | .. | .. | .. | .. | .. | .. | .. | .. | .. |

[1] Figures in parentheses are those for the metropolitan area.

£26 5s: The British Drug Houses (Australia, Proprietary), Limited, Johnson and Johnson Proprietary, Limited, Sir Hugh Poate.

£25: Andrew's Laboratories, Dr. E. J. C. Molesworth and Dr. A. G. Finley.

£21 1s.: Tasmanian Branch, British Medical Association.

£21: May and Baker (Australia) Proprietary, Limited, Parke, Davis and Company, Limited, Perth Radiological Clinic.

£20 1s.: Dr. B. Hiller.

£20: Dr. A. J. Collins.

£15: Dr. H. O. Chapman.

£10 10s. 6d.: Dr. E. Murphy.

£10 10s.: Dr. Mervyn Archdall, Bayer Pharma Proprietary, Limited, Dr. G. Bell, Boots Pure Drug Company (Australia) Proprietary, Limited, Dr. John Bostock, Dr. W. L. Calov, Dr. W. A. Conolly (on behalf of himself and Dr. C. A. Wiles, Dr. D. L. Peate, Dr. D. W. Lawson, Dr. P. Mathers, Dr. J. K. Atkinson and Dr. B. Short), Dr. V. M. Coppleson, Professor Lorimer Dods, Dr. B. T. Edye, Dr. J. Witton Flynn and Dr. B. S. Mackie, Dr. L. N. Gollan, Dr. B. S. Hanson, Dr. Cotter Harvey, Dr. L. R. Mallen, Dr. C. G. McDonald, Dr. J. B. G. Muir, Dr. A. Murray, Sir Wilberforce Newton, Dr. L. J. J. Nye, Dr. L. J. A. Parr, Dr. C. O. F. Rieger, Dr. E. Graeme Robertson, Dr. F. F. Rundle, Dr. W. F. Simmons, Dr. G. R. A. Syme, Sir Harry Wunderly.

£10 1s.: Dr. D. Roseby.

£10 0s. 6d.: Sir John Newman-Morris, Sir Alexander Murphy.

£10: Dr. A. S. Anderson, Dr. J. G. Edwards, Sir Herbert Schlink, Dr. G. C. Willcocks.

£7 7s. 6d.: Professor E. S. J. King.

£5 6s.: Dr. V. L. Collins, Dr. Leigh Cook.

£5 5s. 6d.: Dr. Lucy Bryce, Dr. W. D. Counsell, Dr. E. F. Gartrell, Dr. H. Boyd Graham, Dr. W. W. S. Johnston, Dr. John H. Priestley, Dr. B. L. Stanton.

£5 5s.: Dr. M. S. Alexander, Dr. J. Ringland Anderson, Dr. Phyllis M. Anderson, Dr. R. F. A. Becke, Dr. J. C. Belisario, Dr. G. H. and Dr. M. T. Burnell, Dr. Charles Byrne, Dr. K. Campbell, Dr. A. E. Coates, Dr. H. C. Colville, Dr. K. Cuningham, Sir Hugh Devine, Dr. J. A. Flynn, Dr. M. R. Flynn, Dr. K. B. Fraser, Dr. R. I. Furber, Dr. H. G. Furnell, Dr. J. G. Hayden, Dr. P. L. Hipsley, Dr. W. P. Holman, Sir Victor Hurley, Dr. Adrian Johnson, Dr. C. C. Jungfer, Dr. M. O. Kent-Hughes, Dr. A. E. Lee, Dr. R. H. Macdonald, Dr. W. P. MacCallum, Dr. H. F. Maudsley, Dr. A. M. McIntosh, Dr. W. K. McIntyre, Dr. T. Y. Nelson, Dr. K. J. O'Day, Dr. A. Pryde, Dr. R. Scot Skirving, Dr. K. Starr and Dr. V. Barling, Dr. B. P. Anderson Stuart, Dr. J. G. Wagner, Watson Victor, Limited, Dr. L. T. Wedlick and Dr. R. F. May, Dr. E. F. West, Dr. R. Whishaw, Dr. R. R. Winton.

£5: Professor E. Ford, Dr. C. H. W. Lawes, Sir Peter MacCallum, Dr. Muriel McIlrath.

£3 3s.: Dr. Felix Arden, Dr. K. S. M. Brown, Dr. Howard Bullock, Dr. E. W. Frecker, Dr. S. Goulston, Dr. G. L. Howe, Dr. Laurence Hughes, Dr. L. E. Hurley, Dr. H. M. Jay, Dr. Elizabeth McComas, Dr. A. Moon, Dr. M. S. and Dr. H. S. Patterson, Dr. G. A. Penington.

£3: Dr. Helen Taylor.

£2 3s.: Dr. K. H. Hallam, Dr. Colin Macdonald.

£2 2s. 6d.: Professor A. A. Abbie, Dr. J. L. R. Carter, Dr. R. J. Jackson, Dr. B. W. Monahan, Dr. Henry Searby.

£2 2s.: Dr. Jean and Dr. Patteson Armytage, Dr. C. Craig, Dr. J. E. F. Deakin, Dr. E. Goulston, Dr. G. C. Halliday, Dr. F. S. Hansman, Dr. E. H. Hipsley, Dr. W. I. T. Hotten, Dr. J. G. Hunter, Dr. A. S. Johnson, Dr. E. M. Kent-Hughes, Dr. R. F. Matters, Dr. A. W. Morrow, Dr. Selwyn and Dr. Willa Nelson, Dr. H. K. Porter, Dr. J. Radford, Dr. C. B. Sangster, Dr. S. L. Spencer, Dr. A. H. Tebbutt, Miss D. Tremlett, Dr. R. Wall, Dr. L. Woodland, Professor R. D. Wright.

£1 1s.: Dr. Colin Anderson and Dr. K. G. Aberdeen, Dr. B. A. Cook, Mr. P. Peachey.

Total: £2055 5s. 3d.

## Nominations and Elections.

The undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Lawson, William Scott, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953), 3 Salisbury Crescent, Reade Park, South Australia.

Siglin, Max, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953), 29 Esmond Street, Hyde Park, South Australia.

*The undermentioned have been elected as members of* the South Australian Branch of the British Medical Association: Savage, John Patrick, M.B., B.S., 1954 (Univ. Adelaide) *(qualified 1953); Kneebone, Garry Malcolm, M.B., B.S., 1953* (Univ. Adelaide) (qualified 1952); Fuller, William Rayner, M.B., B.S., 1953 (Univ. Adelaide) (qualified 1952).

## Deaths.

THE following death has been announced:

POTTER.—Del Frances Potter, on August 6, 1954, at Sydney.

## Diary for the Month.

AUG. 21.—Queensland Branch, B.M.A.: Annual General Meeting and Bancroft Oration.
AUG. 24.—New South Wales Branch, B.M.A.: Ethics Committee.
AUG. 25.—Victorian Branch, B.M.A.: Branch Council Meeting.
AUG. 26.—New South Wales Branch, B.M.A.: Branch Meeting.
AUG. 27.—Queensland Branch, B.M.A.: Council Meeting.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

*New South Wales Branch* (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

*Queensland Branch* (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

*South Australian Branch* (Honorary Secretary, 80 Brougham Place, North Adelaide): All Contract Practice appointments in South Australia.

*Western Australian Branch* (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

*Tasmania*: Part-time specialist appointments for the north-west coast of Tasmania.

## Editorial Notices.

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